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*The Common Health of the Commonwealth*

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approved by the
Supervisor of Administration.

# THE VENEREAL DISEASE CAMPAIGN IN MASSACHUSETTS.

MORE than two years ago, under the Commissioner of Health, Dr. A. J. McLaughlin, the State Department of Health established a. Wassermann Laboratory, extending its services to institutions and physicians throughout the State without charge.

Nearly a year ago announcement was made that experimental work in the laboratories of the Department, rendered possible through a legislative appropriation of $10,000 in 1916, had resulted in the production of a specific remedy for syphilis — an organic derivative of arsenic. This product, since named "Arsphenamine," is now being produced in commercial quantities.

Additional measures for the prevention and control of venereal diseases have long been under study and consideration. The importance of these diseases as a public health problem is well known, but the present war conditions have greatly emphasized their importance, while the attitude of the government toward them has served to bring the whole subject into the limelight.

Under these circumstances the State Department of Health feels justified in taking further steps in its campaign against these diseases at this time.

In accordance with this decision the State Department of Health, at a meeting held on Dec. 15, 1917, declared syphilis and gonorrhœa "diseases dangerous to the public health," and as such reportable directly *to the State Department of Health* under authority of chapter 670, Acts of 1913, in accordance with the following regulations: —.

## REGULATIONS GOVERNING THE REPORTING OF GONORRHŒA AND SYPHILIS.

1. Gonorrhœa and syphilis are declared diseases dangerous to the public health and shall be reported in the manner provided by these regulations promulgated under the authority of chapter 670, Acts of 1913.

2. Gonorrhœa and syphilis are to be reported (in the manner provided by these regulations) on and after Feb. 1, 1918.

3. At the time of the first visit or consultation the physician shall furnish to each person examined or treated by him a numbered circular of information and advice concerning the disease in question, furnished by the State Department of Health for that purpose.

4. The physician shall at the same time fill out the numbered report blank attached to the circular of advice, and forthwith mail the same to the State Department of Health. On this blank he shall report the following facts: —

Name of the disease.
Age.
Sex.
Color.
Marital condition and occupation of the patient.
Previous duration of disease and degree of infectiousness.
*The report shall not contain name or address of patient.*

5. Whenever a person suffering from gonorrhœa or syphilis in an infective stage applies to a physician for advice or treatment, the physician shall ascertain from the person in question whether or not such person has previously consulted with or been treated by any other physician within the Commonwealth. If not, the physician shall give and explain to the patient the numbered circular of advice, as provided in the previous regulation.

If the patient has consulted with or been treated by another physician within the Commonwealth and has received the numbered circular of advice, the physician last consulted shall not report the case to the State Department of Health, but shall ask the patient to give him the name and address of the physician last previously treating said patient.

6. In case the person seeking treatment for gonorrhœa or syphilis gives the name and address of the physician last previously consulted, the physician then being consulted shall notify immediately by mail the physician last previously consulted of the patient's change of medical adviser.[1]

7. Whenever any person suffering from gonorrhœa or syphilis in an infective stage shall fail to return to the physician treating such person for a period of six weeks later than the time last appointed by the physician for such consultation or treatment, and the physician also fails to receive a notification of change of medical advisers as provided in the previous section, the physician shall then notify the State Department of Health, giving name, address of patient, name of the disease and serial number, date of report and name of physician originally reporting the case by said serial number, if known.

8. Upon receipt of a report giving name and address of a person suffering from gonorrhœa or syphilis in an infective stage, as provided in the previous section, the State Department of Health will report name and address of the person as a person suffering from a disease dangerous to the public health, and presumably not under proper medical advice and care sufficient to protect others from infection, to the board of health of the city or town of patient's residence or last known address. The State Department of Health shall not divulge the name of the physician making said report.

Copies of this announcement together with circulars of instruction for patients suffering from these two diseases, and the necessary blanks for reporting cases by number, and for notifying the physician first consulted in case the patient seeks a second physician, have been prepared and sent to all physicians in the State.

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[1] In asking physicians to carry out the provisions of this section the State Department of Health appreciates that it is asking more than is authorized by the authority of chapter 670, Acts of 1913. This courtesy is requested, however, in the interest of the public health and to protect the individual who has conformed with the regulations laid down for him.

A further step in this campaign involves the establishing of clinics at central points throughout the State for the treatment of such patients as may present themselves or be directed thither by their physicians. The Department hopes to secure funds for this purpose.

A leaflet containing plain and authoritative statements about these diseases and how they may be avoided has been prepared and is now ready for distribution upon application.

A limited number of small posters suitably framed under glass, cautioning against trusting to quack treatments and patent medicines, are available for posting in public toilets or other proper places.

The Department is also prepared to furnish speakers upon this subject if desired, and has a collection of lantern slides suitable for use in this connection.

## FOOD AND THE CALORIE.

MUCH is being said about the calorie to-day, and it is well for us to understand just what it really is. Not only do we need to know about the kinds of food and their function in the body, but we must also know the amounts of food necessary to supply the body requirements under various conditions.

There is an accepted standard or unit of comparison by which we can estimate the value of everything. For example, the unit of weight is the pound, the unit of measure is the pint, the unit of length, the inch, the unit of currency, the dollar, and the unit of heat, the calorie.

When food is taken into the body it is acted upon by the different digestive juices, changed into a liquid form, and carried by the blood to the different parts of the body, where it is converted into body tissues, or used to supply nervous or muscular energy. Energy is the power to do work. This work may be internal, such as that carried on by the different organs, or external, such as walking, running and the like. When the food is going through these changes in the body, a varying amount of heat is given off according to the kind of food consumed. Since heat can be measured and is easily transformed into forms of energy, the energy value of food can be determined in terms of heat by estimating the amount of heat given off when it is used in the body.

Careful experiments have been made to determine this fuel value of different foodstuffs by burning outside the body a weighed amount of food in a special apparatus in such a way that no heat is lost, but is taken up by a known volume of water. This device is called a calorimeter, and the amount of heat required to raise 1 kilogram of water 1 degree centigrade, or in other words, 1 pound or 1 pint of water 4 degrees Fahrenheit, is called the calorie of food unit.

By burning in this calorimeter 1 gram of the various foodstuffs, namely, protein, fat and carbohydrate, and then noting the change in temperature, and allowing for the fact that in the body the food is not as completely burned as in the calorimeter, the fuel value of food has been established as follows: —

Protein: 4.1 calories per gram or 1.860 calories per pound.
Fat: 9.3 calories per gram or 42.18 calories per pound.
Carbohydrate: 4.1 calories per gram or 1.860 calories per pound.

To find out then the total energy taken into the body in form of food, we must first weigh each article of food, ascertain from some one of the various tables on record the per cent. of protein, fat and carbohydrate it contains, and multiply this per cent. by its proper calorific value and add the results.

This method, however, is not very practical for the ordinary homemaker. She might not have a table giving the percentage composition of the different foods, and would not, probably, be able to give to the work the time required.

A more simple method of computing the individual dietary has been arranged by Prof. Irving Fisher of Yale. He has arranged a table giving the food in "standard portions," or in amounts containing 100 calories, with the number of calories of protein, fat and carbohydrate in each 100 calories. These "standard portions" are for the most part ordinary servings, or a multiple of a serving. For example, two-thirds of a glass of milk is a 100 calorie or standard portion, and contains 19 calories of protein, 52 calories of fat and 29 calories of carbohydrate. By this method it is comparatively easy to reckon mentally the food value of one's daily diet.

Now that we know what a calorie is, and how it is determined and used, we must also know how many calories are needed daily.

If more food is taken into the body than is needed, the excess protein is thrown off by the kidneys in form of uric acid and urea, and the excess fat and carbohydrate is stored in form of fat. If not enough food is taken, some of this excess is consumed. Hence in the process of starvation a loss of body weight sets in and death takes place when about 40 per cent. of the body weight is lost.

The energy requirements are governed by age, sex, size of body, amount of exercise taken, and personal peculiarities. Even at complete rest in bed energy is used in the performance of the body functions, such as the activities of heart, circulation of blood, breathing, etc.

Various dietary standards have been worked out, and most scientists agree that a well-balanced diet for an adult should contain from 2,200 to 3,500 calories, and that from 10 to 15 per cent. of the total calories should come from the protein food, 40 to 60 per cent. from the carbohydrate food, and 25 to 40 per cent. from the fats.

The number of calories needed increases in proportion to the increase in mechanical energy expended and in proportion to the size of the individual, a large person requiring more fuel than a small, and a man or woman doing heavy muscular work requiring more calories, or more energy yielding food, than a man working in an office.

Scientists have estimated the approximate energy requirements of the average individual to be as follows: —

*Calories required per Pound of Body Weight per Hour.*

Sleeping: 0.4 calories per pound of body weight per hour.
Sitting quietly (reading, at meals): 0.6 calories per pound of body weight per hour.
At light muscular exercise (standing, dressing, sewing, typewriting, etc.): 1.0 calories per pound of body weight per hour.
At active muscular exercise (carpenter, mail carrier, etc.): 2.0 calories per pound of body weight per hour.
At severe muscular exercise (digging, washing, wood-cutting): 3.0 calories per pound of body weight per hour.

If, then, we know the weight and occupation of a person we can easily estimate his energy requirement, for example: —

A person weighing 130 pounds carrying out the following program would require 2,470 calories of food for twenty-four hours, and about 300 of the calories should come from protein food: —

Sleeping quietly 8 hours: 8 hours × 0.4 calories = 3.2 calories per pound for 8 hours.
Sitting quietly (eating, reading) 8 hours: 8 hours × 0.6 calories = 4.8 calories per pound for 8 hours.
Light muscular work 5 hours: 5 hours × 1.0 calories = 5.0 calories per pound for 5 hours.
Active muscular work 3 hours: 3 hours × 2.0 calories = 6.0 calories per pound for 3 hours.

Total, 19 calories per pound for 24 hours.
Weight 130 pounds.
130 × 19 calories = 2,470 calories needed per day.

For children the food requirement is higher than that of adults because more food is used in building new tissues and more energy is used in muscular activity. For example, a boy of twelve or fifteen requires as much food as his father. However, as old age comes on the body is able to take care of less food, there is less muscular activity and the food requirement diminishes.

The energy requirement during growth and old age has been estimated by scientists to be as follows: —

*During Growth.*

| Age in Years. | Calories per Pound of Body Weight per Day. |
|---|---|
| Under 1, | 45. |
| 1–2, | 45–40. |
| 2–5, | 40–36. |
| 6–9, | 36–30. |
| 10–13, | 30–27. |
| 14–17, | 27–20. |
| 17–25, | Not less than 18. |

*During Old Age.*

| | |
|---|---|
| 60–70, | 10 per cent. less than middle life. |
| 70–80, | 20 per cent. less than middle life. |
| 80 and over, | 30 per cent. less than middle life. |

The value of the calorific knowledge of food can easily be seen when we realize that the same number of food calories may be bought at a large range of prices, and that we can, with this knowledge, easily reduce the food bill without endangering the health. But, we must always remember that at least 10 per cent. of the total calories must come from the protein food, for this is the only food to give us the building material.

Oleomargarine at 25 cents per pound will give us the same food value as butter at 50 cents; 1 quart of milk at 12 cents per quart will give us as much food value as eight eggs at 78 cents per dozen.

A dietary standard is also of value in determining the reason for some abnormal condition in health or loss or gain in weight of some member of the family, which might easily result from insufficient or improper food conditions, and, too, such a standard is almost necessary in providing a well-balanced diet for large groups of people as in institutions, colleges, hospitals, and the like, and in providing an adequate diet for invalids.

It is not generally necessary to work out a daily dietary, but it is wise to estimate the diet for a certain period of time, such as a week or a month. To do this, estimate the food on hand at a given period, and keep an accurate account of food brought in, then find out from actual calculations if there has been any great variation from given standards. If so, it is best to investigate the cause.

The time may come in a generation or so when food will either be sold by calories or, if sold by measure and weight, the housekeeper will think of it in terms of calories.

We must not become confused in thinking of food in this new way. Let us keep in mind this simple fact, that the body is made up of these elements (carbon, hydrogen, oxygen, nitrogen and the minerals, — calcium, potassium, chlorine, flourine, iron, phosphorus, magnesium, manganese, sodium, sulphur, silica, iodine), and in order to keep it in good condition and make it possible for us to do our best work, we must supply these elements in the form of food in certain definite amounts. These amounts may be determined by means of the calorie.

But above all, we must not forget that an adequate diet must not only contain the right food in sufficient amounts, but it must be made acceptable by serving well-flavored meals in an attractive manner. Even the simplest, most inexpensive meal may be made palatable if well seasoned and daintily served.

## DIPHTHERIA FATALITY RATE TOO HIGH.

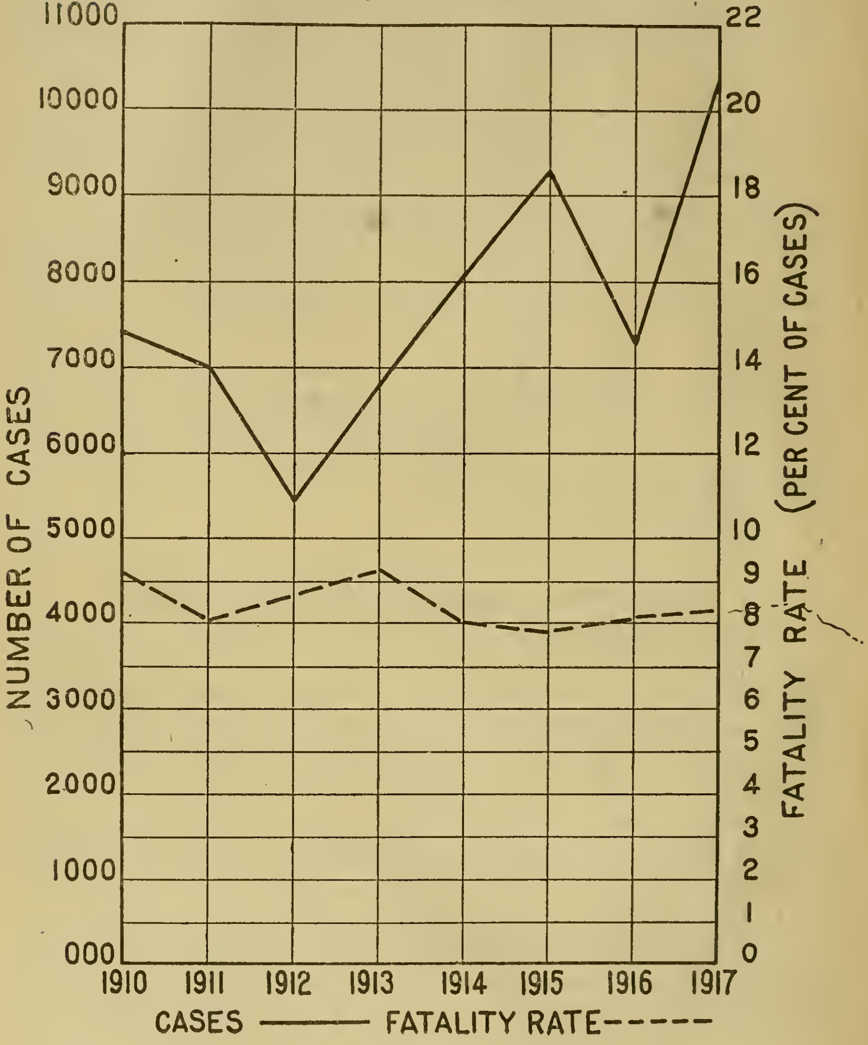
EIGHT out of every 100 persons sick with diphtheria in Massachusetts die. There has been no material change in the fatality rate of the disease in Massachusetts for the past few years, as shown by the accompanying table.

The early calling of the physician in case of diphtheria, coupled with the prompt administering of diphtheria antitoxin in sufficient amounts, will decrease this fatality rate at once.

The early and prompt administration of antitoxin is essential.

The table on page 11 is prepared by W. H. Park, M.D., of the New York City Health Department, based on extensive clinical and experimental study.

## DIPHTHERIA IN MASSACHUSETTS
## CASES REPORTED AND FATALITY RATE
1910 — 1917



*Dosage of Antitoxin in Diphtheria (Units).*

| | In Mild Cases. | In Moderate Cases. | In Severe Cases. | In Malignant Cases. |
|---|---|---|---|---|
| Infants, 10 to 30 pounds in weight (under 2 years of age). | 2,000–3,000 | 3,000–5,000 | 5,000–10,000 | 10,000 |
| Children, 30 to 90 pounds in weight (under 15 years of age). | 3,000–4,000 | 4,000–10,000 | 10,000–15,000 | 15,000–20,000 |
| Adults, 90 pounds and over in weight, . | 3,000–5,000 | 5,000–10,000 | 10,000–20,000 | 20,000–40,000 |

Cases of laryngeal diphtheria, moderate cases seen late at the time of the first injection and cases of diphtheria occurring as a complication of the exanthemata should be classified and treated as "severe" cases.

In all cases a single dose of the proper amount, as indicated in the schedule, is recommended. For immunizing purposes a dose of 1,000 units should be used.

It is recommended that the methods of administration be as follows: —

*Mild Cases.* — Subcutaneous or intramuscular.
*Moderate Cases.* — Intramuscular or subcutaneous.
*Severe Cases.* — Intramuscular or subcutaneous or intravenous.
*Malignant Cases.* — Intravenous.

## METHODS FOR PREVENTION OF DIPHTHERIA.

1. Isolation of diphtheria carriers and all clinical cases of diphtheria on the appearance of the first symptoms of the disease.
2. Culturing of families, schools, institutions and other contacts.
3. Immunization of all contacts with diphtheria antitoxin, using 1,000 units.
4. Use of the Schick test in families, schools and institutions.[1]
5. Active immunization with toxin-antitoxin of those individuals who prove to be susceptible to the disease by the Schick test.[1]

Isolation of cases, culturing of contacts and immunization by antitoxin have been carried out for several years. This immunization is fleeting and protects the person for only a few weeks, but is very efficient in checking outbreaks of the disease.

The Schick test and active immunization with toxin-antitoxin enables the health officers to locate the persons who are susceptible to the disease, and to immunize these persons with toxin-antitoxin. This immunity in practically 95 per cent. of all persons so treated will last for years.

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[1] Material for the Schick test and toxin-antitoxin is furnished free by the Massachusetts State Department of Health through the District Health Officers.

The Schick test is an injection of one-fiftieth of the minimum lethal dose for a 250-gram guinea pig of diphtheria toxin in one-tenth cubic centimeter sterile physiological salt solution, intracutaneously (between the skin layers) on the flexor surface of the forearm.

This test is not an emergency measure, but can be carried out at any time to determine who are susceptible to the diphtheria bacillus and who are not, so that when diphtheria appears those susceptible are known and can be immunized at once.

The following methods of procedure and interpretation of results are from an article in the April, 1917, "New York State Health News" by Abraham Zingher, M.D., which will give a clear insight of the Schick test.

The three prerequisites for the test are: (*a*) a reliable toxin, (*b*) a proper technic, and (*c*) a correct interpretation of the reaction. Care in getting and keeping the toxin will answer the first. A very good syringe (preferably a 1 cubic centimeter Record) and a fine, sharp, but short-beveled platinumiridium or steel needle are needed for the second. The ability to carry out the test properly is easily acquired. One point that may serve in guiding one in the injection of the diluted toxin might be emphasized; if the needle has been inserted into the proper layer of the epidermis, then the oval opening of the needle will be visible through the superficial layers of cells. A definite wheal-like elevation, with the distinct markings of the openings of the hair follicles, shows that the injection has been made properly, and that the fluid is confined to a small area of the epidermis. Here it will exert its irritant action, if the individual tested is not immune to diphtheria.

For the interpretation of the test, it is important to remember that the *positive* reaction represents the action of an irritant toxin on unprotected cells. A trace of redness appears slowly at the site of injection in from twelve to twenty-four hours, and usually a distinct reaction in the course of twenty-four to forty-eight hours. The reaction reaches its height on the third or fourth day and gradually disappears, leaving a definitely circumscribed scaling area of brownish pigmentation, which persists for three to six weeks. At its height the positive reaction consists of a circumscribed area of redness and slight infiltration which measures from 1 to 2.5 centimeters in diameter. The degree of redness and infiltration varies to a great extent with the intensity of the reaction. In the *negative* reaction, the skin remains normal. In the *pseudoreaction* there is an anaphylactic response of the tissue cells to the protein substance of the autolyzed diphtheria bacilli, which is present in the toxic broth used for the test. Like other anaphylactic skin phenomena, the reaction is of an urticarial nature, appears early, within six to eighteen hours, reaches its height in thirty-six to forty-eight hours, and disappears on the third or fourth day, leaving no pigmentation or only a poorly defined, small, brownish spot. At its height the pseudoreaction shows varying degrees of infiltration, and appears as a small central area of dusky redness, with a secondary areola, which gradually shades off into the surrounding skin. A control test may be made by injecting into the other forearm in the same dilution diphtheria toxin which has been heated to 75 degrees C. for five minutes to destroy the soluble toxin. The toxin broth used in the test contains not only the powerful toxin secreted by the diphtheria bacilli, but also the protein substance of a large number of these bacilli, which have disintegrated and gone into solution. The positive Schick test in the nonimmune is produced by the secreted toxin. This toxin is affected by heating and can be destroyed if the toxin broth is kept at 75 degrees C. for five minutes. The protein substance of the diphtheria bacilli, which is also present in the toxin broth, and produces the pseudoreactions, is not affected by heating at the above temperature. The heated toxin, therefore, when properly diluted, is of value in controlling the pseudoreactions. If an individual gives a *positive* Schick reaction, the control test will be negative. If he gives a *pseudoreaction*, then the control test with the heated toxin will show a similar area of redness and infiltration; both reactions will disappear in three to four days and leave only an irregular blotchy area of pigmentation.

Occasionally one sees a *combined* reaction which represents both a positive and a pseudoreaction. The central area of redness is larger and better defined; the amount of infiltration is also more marked. To interpret such a reaction we should obtain the evidence of a true reaction, a definite area of scaling brownish pigmentation after the pseudo element has disappeared in the test. In addition, we should obtain a similar though weaker reaction in the control test made with heated toxin. The control will, of course, represent only the pseudoreaction. These pseudoreactions are sometimes seen in the young, but more frequently in the adult. It is possible to differentiate them from the positive reactions by making at the same time on the opposite forearm a control test with heated toxin.

For purposes of recording the tests we may designate the positive reaction by the following signs, which represent varying degrees of intensity. This is especially important in the active immunization with mixtures of diphtheria toxin and antitoxin when we wish to know the degree of the original or control test before the immunizing injections, and of tests made at intervals after the injections.

+ + strongly positive; marked redness and considerable local infiltration, occasionally superficial vesiculation.
+ positive; redness and little or no local infiltration.
± moderately positive; varying degrees of redness and no local infiltration.
$\underline{\pm}$ faintly positive; slight redness and no local infiltration.
— negative; no redness and no local infiltration.

. . . . . . . . . . . . .

*Control tests* should be made at the same time on the other forearm with heated toxin. The children should be seen at the end of twenty-four hours to determine the presence of the *pseudo* and *combined* reactions; if either one is present, an area of redness will appear both at the site of the Schick test and of the control test. If the Schick test is *positive*, the skin at the site of the control test will be normal. Definite observations with a correct reading of most of the reactions can thus be made at the end of twenty-four hours. The children should be seen again, however, in seventy-two to ninety-six hours for a final reading. At this time, the *pseudoreactions* will have almost entirely disappeared, and only slightly pigmented areas will be seen at the sites of the test and control. In a *combined* reaction the positive reaction will be quite pronounced and the control will show slight pigmentation. It is quite certain that if a control test with heated toxin is made at the time of the Schick test, followed by observations at the end of twenty-four and seventy-two hours, the pseudo and combined reactions will be cleared up, and the positive and negative Schick tests definitely indicated.

### Active Immunization against Diphtheria.

At the time of the second observation, the children who give a positive Schick test receive the first injection of toxin-antitoxin. Those who give a pseudo or a negative reaction are not injected because they are already immune. Those who give a combined reaction are susceptible and may be injected with toxin-antitoxin, but in them the more marked local and constitutional reactions may be expected.

A second and a third immunizing dose of toxin-antitoxin are given at intervals of seven days. The mixture of toxin-antitoxin which is used for active immunization may be either neutral or slightly toxic to the guinea pig. Each dose is 1 cubic centimeter, undiluted, and injected subcutaneously.

Local and constitutional symptoms after the toxin-antitoxin injections were noted in from 20 to 50 per cent. of the children. They consisted of redness, slight swelling, tenderness and some temperature. These symptoms disappeared within forty-eight hours. The reactions to the immunizing injections are due in greater part to a susceptibility to the autolyzed protein of the diphtheria bacillus rather than to the neutralized toxin.

Retests with the Schick test should be made at the end of three months, one year, and regularly thereafter every year to determine the results of the immunization and the duration of the active immunity.

## REPORT OF DIVISION OF FOOD AND DRUGS.

During the month of December, 1917, samples were collected in 34 cities and towns.

There were 263 samples of milk examined, of which 35 were below the legal standard, 2 samples were skimmed milk not properly labeled, and 7 samples contained added water.

There were 347 samples of food examined, of which the following were adulterated: 1 sample of watered clams, 1 sample of decomposed chocolate bars, 76 samples of stale eggs sold as fresh, 2 samples of decomposed fish, 1 sample of honey containing cane sugar and not so labeled, 4 samples of compound lard not properly labeled, 1 sample of maple sugar containing cane sugar, 2 samples of mince meat containing benzoate of soda and not so labeled, 1 sample of sausage containing starch in excess of 2 per cent., 1 sample of decomposed scallops, and 8 samples of vinegar low in acid.

There were 62 samples of drugs examined, of which 21 were adulterated. These consisted of 5 samples of camphorated oil, 13 samples of spirit of nitrous ether, 2 samples of spirit of peppermint, and 1 sample of tincture of iodine deficient in the active ingredient.

The police departments submitted 18 samples of poisons and 5 samples of liquor for examination.

There were 8 convictions for violation of the laws, $275 in fines being imposed. Albert H. French of Rockport and Emery C. Willard of Ashby, on two counts, were convicted for violation of the milk laws. Alexander E. Aikens of Salem and Anthim H. Brunell of Worcester were convicted for violation of the food laws. Walter F. Drake and the Olympia Drug Company of Gloucester were convicted for violation of the drug laws. The Olympia Drug Company appealed its case. George Griffith of Templeton was convicted for violation of the slaughtering laws.

There were 5 confiscations made, consisting of 24,362 pounds of decomposed smelts, 12 pounds of decomposed beef liver, 3 pounds of tainted chopped meat, 20 pounds of decomposed veal, and 1 tuberculous hog weighing 174 pounds.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

One sample of decomposed chocolate bars, from Anthim H. Brunell of Worcester; 1 sample of vinegar low in acid, from Thomas Dwyer of Somerville; 3 samples of vinegar low in acid, from Patrick McCarthy & Son of Sherborn; and 2 samples of vinegar low in acid, from the Bellingham Bottling Works of Chelsea.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of November, 1917: 123,064 dozens of case eggs, 165,401 pounds of broken-out eggs, 1,175,219 pounds of butter, 836,501 pounds of poultry, 7,011 pounds of game, 9,313,128 pounds of fresh meat and fresh meat products, and 2,926,870 pounds of fresh food fish, making a total of 14,547,194 pounds.

There was on hand in storage on Dec. 1, 1917: 9,068,034 dozens of case eggs, 493,033 pounds of broken-out eggs, and 15,690,194 pounds of butter, making a total of 25,251,261 pounds.

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF DECEMBER, 1917.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of December, 1917: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, | 1,454 | 208 | 523 | 150 | 573 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, | 237 | 51 | 186 | |
| *Typhoid fever (Widal test), | 114 | 27 | 76 | 11 |
| Typhoid fever (culture test), | 35 | 4 | 31 | |
| Malaria, | 1 | | 1 | |
| Gonorrhœa, | 127 | 21 | 106 | |
| Miscellaneous, | 51 | | | |

Total number of examinations made, 2,019.

## QUARTERLY REPORT UPON THE DISTRIBUTION OF BIOLOGICAL PRODUCTS AND DIAGNOSTIC OUTFITS.

The following gives the total number of biological products and diagnostic outfits distributed by the State Department of Health during the three months ending Dec. 31, 1917: —

### *Biological Products.*

| | |
|---|---|
| Diphtheria antitoxin: — | |
| 12,000 units (for the Boston City Hospital), | 1,255 bottles. |
| 6,000 units (for the Boston City Hospital), | 112 bottles. |
| 12,000 units, | 91 bottles. |
| 6,000 units, | 5,618 bottles. |
| 3,000 units, | 6,537 bottles. |
| 2,000 units (for the Boston City Hospital), | 84 bottles. |
| 1,500 units, | 4,743 bottles. |
| 750 units, | 1,484 bottles. |
| Smallpox vaccine: — | |
| Capillary tubes, | 44,958 |
| Bulk, | 950 |
| Typhoid vaccine: — | |
| Vials, | 4,226 |
| Bulk, | 19,250 |
| Typhoid-Paratyphoid vaccine: — | |
| Vials, | 3,195 |
| Bulk, | 4,980 |
| Paratyphoid vaccine: — | |
| Vials, | 625 |
| Antimeningitis serum, | 400 bottles. |
| Silver nitrate solution, | 10,452 ampoules. |

### *Diagnostic Outfits.*

| | |
|---|---|
| Culture tubes, | 6,751 |
| Sputum bottles, | 1,484 |
| Pneumonia outfits, | 100 |
| Widal outfits, | 695 |
| Typhoid culture outfits, | 247 |
| Malaria-Gonorrhœa outfits, | 57 |

## RÉSUMÉ OF COMMUNICABLE DISEASES FOR DECEMBER, 1917.

### General Prevalence.

There were 7,574 cases of communicable disease reported during December, which is an increase over the total of 6,051 cases for the previous month and 2,823 cases more than the December, 1916, total of 4,751 cases.

The increase is largely confined to measles, whooping cough, German measles, diphtheria and lobar pneumonia.

*Anthrax.* — There were 4 cases of anthrax reported during the month. Of this number, 2 patients were hide handlers in beam houses, 1 worked as a carpenter in a leather factory for the two days preceding the onset of the disease, and the remaining patient worked in a chemical industry.

*Lobar Pneumonia.* — There were 460 cases of lobar pneumonia reported in December, an increase over the cases reported in November. This disease is much more prevalent than is supposed, and it is hoped that by complete reporting, the records for the coming year will give a clear idea of its prevalence in the Commonwealth.

*Smallpox.* — The 10 cases reported in December were principally secondary cases from without the State, receiving their infection chiefly from contact with smallpox cases in Maine. Four had been vaccinated over seven years previously and 6 had never been vaccinated. The distribution of the December cases is given in a table below: —

| Date of Report. | Town or City. | Number of Cases. | Source of Infection. |
|---|---|---|---|
| Dec. 6, | Boston, | 2 | Unknown contact. Both patients refused to give information. |
| Dec. 13, | Boston, | 1 | Unknown contact. |
| Dec. 9, | Brookline, | 1 | Contact with smallpox case in Pittsfield, Me. |
| Dec. 12, | Malden, | 1 | Contact with unknown case in Eastport, Me. |
| Dec. 16, | Beverly, | 1 | Unknown contact. |
| Dec. 27, | Beverly, | 1 | Contact with December 16 case in Beverly. |
| Dec. 24, | Springfield, | 1 | Unknown contact. |
| Dec. 27, | Worcester, | 1 | Contact with smallpox case in Alton, Ill. |
| Dec. 31, | Lowell, | 1 | Contact with unknown case in Limestone, Me. |

*Diseases on the Premises of Milk Handlers.* — There were 4 cases of scarlet fever and 2 cases of typhoid fever on farms of milk producers and 1 case of scarlet fever in an employee of a milk depot reported during the month. These cases were all isolated by the local boards of health and no secondary cases followed so far as known.

## EPIDEMICS AND OUTBREAKS.

*Diphtheria.* — In Brockton 23 cases of diphtheria were reported in December, but the undue prevalence was confined to one school district. Cultures from 442 pupils taken by the local board of health disclosed 11 healthy carriers, and on isolation of these individuals the outbreak ceased.

In Foxborough 1 case was reported in November and 18 cases in December. Investigation showed a surprising condition. One family was found which had 7 cases of diphtheria, a situation which would not have occurred if a physician had been called for the first case. By administering immunizing doses of antitoxin to members of the family on the appearance of the first case of diphtheria in the family, secondary cases would have been prevented.

In Gardner where diphtheria has been unduly prevalent for the past four months, a school nurse was employed to do "follow-up" work. In investigating absentees from school she found 15 cases of diphtheria unattended by a physician. This situation had undoubtedly existed for months and was the cause of a large number of the cases reported from that town.

*Typhoid Fever.* — Two distinct outbreaks occurred during the month. In North Brookfield 13 cases were reported, 12 of whom worked in the same factory and 1 was a child of one of the workers, a secondary case.

The other outbreak was in Worcester Academy, 5 cases being reported. Investigations are being carried out to locate the source of the infection in these outbreaks.

## RARE DISEASES.

*Anterior poliomyelitis* was reported from Brockton, 2; Fall River, 1; and Springfield, 1.

*Anthrax* was reported from Boston, 1; Stoneham, 1; and Woburn, 2.

*Dog-bite* was reported from Brockton,1; Lawrence,1; and Worcester, 1.

*Dysentery* was reported from Boston, 1.

*Epidemic cerebrospinal meningitis* was reported from Beverly, 1; Boston, 2; Brockton, 1; Cambridge, 1; Camp Devens, 1; Canton, 1;

Greenfield, 1; Lawrence, 1; Lowell, 2; Malden, 1; Tewksbury, 1; Waltham, 1; and Winthrop, 1.

*Malaria* was reported from Boston, 1; and Marblehead, 1.

*Pellagra* was reported from Fall River, 1; Malden, 1; and Middleton, 1.

*Septic sore throat* was reported from Boston, 2; Cambridge, 1; Fall River, 1; Framingham, 2; Haverhill, 1; Leominster, 2; New Bedford, 1; Newton, 1; Plymouth, 1; Somerville, 1; Springfield, 1; and Worcester, 3.

*Smallpox* was reported from Beverly, 2; Boston, 3; Brookline, 1; Lowell, 1; Malden, 1; Springfield, 1; and Worcester, 1.

*Tetanus* was reported from Peabody, 1; and Pittsfield, 1.

*Trachoma* was reported from Arlington, 1; Boston, 3; Haverhill, 1; Holyoke, 1; and Worcester, 2.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | November, 1917. | December, 1917. | December, 1916. |
|---|---|---|---|
| Total cases, . . . . . . | 6,051[1] | 7,574 | 4,751 |
| Case rate per 100,000 population, . . | 157.2 | 196.8 | 125.7 |

### *Certain Prevalent Diseases.*

| | November, 1917. | December, 1917. | December, 1916. | Cities and Towns noticeably exceeding their Endemic Indexes.[2] |
|---|---|---|---|---|
| Diphtheria: — | | | | Attleboro, . . (3) 12<br>Boston, . . . (224) 463<br>Foxborough, . . (0) 18<br>Amesbury, . . (0) 29<br>Chelsea, . . . (10) 22<br>Haverhill, . . (14) 26<br>Revere, . . . (8) 15<br>Lowell, . . . (24) 45<br>Newton, . . . (5) 18<br>Ashby, . . . (0) 6<br>Gardner, . . . (4) 14<br>Lancaster, . . (0) 8<br>Springfield, . . (21) 37 |
| Total cases, . . . . . . | 1,181 | 1,156 | 782 | |
| Case rate per 100,000 population, . | 30.7 | 30.0 | 20.7 | |
| Measles: — | | | | New Bedford, . . (12) 59<br>Braintree, . . (0) 54<br>Brookline, . . (1) 21<br>Medfield, . . . (0) 19<br>Chelsea, . . . (9) 59<br>Everett, . . . (12) 81<br>Ipswich, . . . (0) 14<br>Salem, . . . (17) 91<br>Swampscott, . . (1) 47<br>Arlington, . . (1) 49<br>Lexington, . . (2) 18<br>Somerville, . . (17) 98<br>Needham, . . (1) 26<br>Blandford, . . (0) 34<br>Chicopee, . . (2) 31<br>Holyoke, . . . (17) 135<br>Leverett, . . . (0) 20<br>South Hadley, . (0) 28<br>Westfield, . . (1) 174 |
| Total cases, . . . . . . | 1,232 | 1,920 | 1,058 | |
| Case rate per 100,000 population, . | 32.0 | 49.9 | 28.0 | |
| Scarlet fever: — | | | | Springfield, . . (14) 42<br>Westfield, . . (2) 14<br>Pittsfield, . . (7) 25 |
| Total cases, . . . . . . | 587 | 671 | 586 | |
| Case rate per 100,000 population, . | 15.3 | 17.4 | 15.5 | |
| Typhoid fever: — | | | | Fall River, . . (10) 25<br>North Brookfield, . (0) 13<br>Worcester, . . (5) 10 |
| Total cases, . . . . . . | 120 | 98 | 79 | |
| Case rate per 100,000 population, . | 3.1 | 2.6 | 2.1 | |
| Whooping cough: — | | | | |
| Total cases, . . . . . . | 421 | 594 | 172 | |
| Case rate per 100,000 population, . | 10.9 | 15.4 | 4.6 | |
| Tuberculosis, pulmonary: — | | | | |
| Total cases, . . . . . . | 705 | 607 | 718 | |
| Case rate per 100,000 population, . | 18.3 | 15.8 | 19.0 | |
| Tuberculosis, other forms: — | | | | |
| Total cases, . . . . . . | 85 | 60 | 43 | |
| Case rate per 100,000 population, . | 2.2 | 1.6 | 1.1 | |

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[1] The diagnosis in certain cases has been revoked since the November Bulletin was issued.

[2] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

## INTERSTATE RECIPROCAL NOTIFICATION IN DECEMBER.

| Disease and Locality of Notification. | Health Authority referred to — | Why referred. |
|---|---|---|
| Diphtheria; Lowell, . . | Mount Saint Mary's College, Emmitsburg, Md., notified Massachusetts State Department of Health. | Patient in the college had recovered from diphtheria and returned to his home in Lowell, Mass. |
| Diphtheria; Milton, . . | Mount Saint Mary's College, Emmitsburg, Md., notified Massachusetts State Department of Health. | Patient in the college had recovered from diphtheria and returned to his home in Milton, Mass. |
| Smallpox; Brookline, . . | State Department of Health, Augusta, Me. | Smallpox case visited Pittsfield, Me., November 22 and Hartland, Me., November 29; onset of disease, December 3. |
| Smallpox; Malden, . . | State Department of Health, Augusta, Me. | Patient came from Eastport, Me., November 21; onset of disease, December 1. |
| Smallpox; Lowell, . . | State Department of Health, Augusta, Me. | Patient left Limestone, Me., December 11; onset of disease, December 24. |
| Smallpox; Worcester, . . | State Department of Health, Springfield, Ill., and board of health, East St. Louis, Ill. | Patient came from Alton, Ill. In contact with a case of smallpox on a car going from Alton to Upper Alton, Ill.; on way from Alton patient stopped at a known hotel in East St. Louis, Ill.; onset of disease, December 18. |
| Tetanus; Pittsfield, . . | State Department of Health, Albany, N. Y. | Patient arrived ill at Hillcrest Hospital from East Chatham, N. Y. |
| Tuberculosis; Brookline, . | State Board of Health, Concord, N. H. | Patient rejected under selective service law. Moved to Mudget Mills, N. H. |
| Tuberculosis; New Hampshire. | State Board of Health, Concord, N. H. | Residence of patient was Manchester, N. H.; applied for admission to a sanatorium. |
| Tuberculosis; Sharon, . . | State Board of Health, Burlington, Vt. | Discharged from Sharon Sanatorium, Mass., and went to Island Pond, Vt. |
| Tuberculosis; 5 cases, Camp Devens. | State Department of Health, Hartford, Conn. | Discharged from Camp Devens and returned to their homes in Connecticut. |
| Tuberculosis; Sharon, . . | State Board of Health, Providence, R. I. | Discharged from Sharon Sanatorium, Mass., and went to Providence, R. I. |
| Tuberculosis; Sharon, . . | State Department of Health, Albany, N. Y. | Discharged from Sharon Sanatorium Mass., and went to Loomis Sanatorium Loomis, N. Y. |
| Tuberculosis; Camp Devens, | State Department of Health, Albany, N. Y. | Discharged from Camp Devens and returned to his home in New York. |
| Tuberculosis; Camp Devens, | State Board of Health, Providence, R. I. | Discharged from Camp Devens and returned to his home in Rhode Island. |
| Typhoid fever; Worcester, . | State Board of Health, Concord, N. H. | Patient at Worcester Academy had typhoid fever and went to his home in Hanover, N. H., on December 8 while sick. |
| Typhoid fever; Worcester, . | State Board of Health, Concord, N. H. | Patient at Worcester Academy had typhoid fever and went to his home in North Hampton, N. H., while sick. |

## OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES.

| Disease. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Anthrax, | Beamer, | Stoneham, | M | 50 | W |
| Anthrax, | Carpenter, | Woburn, | M | 30 | W |
| Anthrax, | Leather worker, | Woburn, | M | 26 | W |
| Anthrax, | Carpenter, | Woburn, | M | 40 | W |
| Eczema, | Napper, | Lowell, | M | – | – |
| Lead poisoning, | Painter, | Dorchester, | M | 43 | W |
| Lead poisoning, | Mixer, | Reading, | M | – | W |

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1917. | 63A Anterior Poliomyelitis. | | 19A Chicken Pox. | | 9 Diphtheria. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, . . . . . | 3,849,006 | 10 | **3** | 669 | – | 1,181 | **79** | 144 | – | 290 | **242** | 1232 | **20** |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, . . . . . . . | 778,500 | 1 | – | 85 | – | 414 | **24** | 38 | – | 100 | **73** | 253 | **8** |
| 4 | Cities, 150,000-200,000. | | | | | | | | | | | | | |
| 5 | Worcester, . . . . . . | 170,077 | – | – | 11 | – | 61 | **4** | 5 | – | 21 | **11** | 9 | **2** |
| 6 | Cities, 100,000-150,000. | *570,968* | *3* | – | *63* | – | *186* | *17* | *14* | – | *44* | *32* | *84* | *1* |
| 7 | Fall River, . . . . . . | 127,218 | – | – | 11 | – | 25 | **7** | 2 | – | 9 | **5** | 2 | – |
| 8 | New Bedford, . . . . . | 115,272 | – | – | 10 | – | 16 | **3** | 3 | – | 10 | **9** | 26 | **1** |
| 9 | Cambridge, . . . . . . | 110,582 | – | – | 16 | – | 38 | – | 3 | – | 8 | **5** | 31 | – |
| 10 | Springfield, . . . . . . | 109,174 | 1 | – | 21 | – | 60 | **6** | 6 | – | 13 | **7** | 21 | – |
| 11 | Lowell, . . . . . . . | 108,722 | 2 | – | 5 | – | 47 | **1** | – | – | 4 | **6** | 4 | – |
| 12 | Cities, 50,000-100,000. | *511,498* | *2* | – | *70* | – | *102* | *9* | *8* | – | *34* | *28* | *177* | *2* |
| 13 | Lynn, . . . . . . . | 98,659 | 2 | – | 1 | – | 11 | – | – | – | 8 | **4** | 3 | – |
| 14 | Lawrence, . . . . . . | 92,187 | – | – | 11 | – | 8 | **1** | – | – | 1 | **5** | 3 | – |
| 15 | Somerville, . . . . . . | 91,102 | – | – | 8 | – | 33 | **3** | 3 | – | 6 | **6** | 30 | – |
| 16 | Brockton, . . . . . . | 64,668 | – | – | 10 | – | 12 | – | 1 | – | 7 | **1** | 2 | – |
| 17 | Holyoke, . . . . . . | 62,179 | – | – | 1 | – | 4 | **2** | 1 | – | – | **5** | 115 | **2** |
| 18 | Haverhill, . . . . . . | 51,806 | – | – | 34 | – | 14 | **2** | – | – | 10 | **2** | 7 | – |
| 19 | Malden, . . . . . . . | 50,897 | – | – | 5 | – | 20 | **1** | 3 | – | 2 | **5** | 17 | – |
| 20 | Cities and Towns, 25,000-50,000. | *498,330* | – | – | *98* | – | *105* | *8* | *13* | – | *32* | *18* | *181* | *3* |
| 21 | Chelsea, . . . . . . . | 48,273 | – | – | 1 | – | 27 | **2** | – | – | 9 | **2** | 51 | – |
| 22 | Newton, . . . . . . . | 44,573 | – | – | 5 | – | 6 | **1** | 5 | – | 5 | **1** | 4 | – |
| 23 | Quincy, . . . . . . . | 44,221 | – | – | 8 | – | 11 | – | – | – | 1 | **2** | 6 | – |
| 24 | Pittsfield, . . . . . . | 42,913 | – | – | 9 | – | 4 | – | – | – | 5 | **3** | 5 | – |
| 25 | Fitchburg, . . . . . . | 40,464 | – | – | 3 | – | 11 | **1** | – | – | 5 | **1** | 3 | – |
| 26 | Salem, . . . . . . . | 39,872 | – | – | 22 | – | – | – | – | – | 2 | – | 53 | **1** |
| 27 | Everett, . . . . . . . | 39,588 | – | – | 5 | – | 16 | **2** | 1 | – | 1 | **1** | 45 | **1** |
| 28 | Taunton, . . . . . . . | 37,001 | – | – | 3 | – | 5 | **1** | – | – | 1 | **3** | 1 | – |
| 29 | Brookline, . . . . . . | 36,007 | – | – | 22 | – | 4 | – | 5 | – | 2 | **1** | 4 | – |
| 30 | Medford, . . . . . . . | 33,758 | – | – | 17 | – | 11 | **1** | – | – | 1 | **3** | 5 | **1** |
| 31 | Chicopee, . . . . . . | 32,230 | – | – | 2 | – | 3 | – | 1 | – | – | **1** | 4 | – |
| 32 | Waltham, . . . . . . . | 31,179 | – | – | 1 | – | 3 | – | 1 | – | – | – | – | – |
| 33 | Revere, . . . . . . . | 28,251 | – | – | – | – | 4 | – | – | – | – | – | – | – |
| 34 | Cities and Towns, 10,000-25,000. | *569,407* | – | – | *221* | – | *140* | *12* | *4* | – | *33* | *26* | *386* | *2* |
| 35 | Beverly, . . . . . . . | 24,863 | – | – | 5 | – | 4 | – | – | – | – | – | 1 | – |
| 36 | Gloucester, . . . . . . | 24,513 | – | – | 3 | – | 1 | – | 1 | – | – | **2** | – | – |
| 37 | Northampton, . . . . . | 22,636 | – | – | 14 | – | 2 | **1** | – | – | 1 | – | 1 | – |
| 38 | North Adams, . . . . . | 22,042 | – | – | 11 | – | 2 | **2** | – | – | 1 | – | – | – |
| 39 | Peabody, . . . . . . . | 19,908 | – | – | 1 | – | 2 | – | – | – | 3 | **3** | – | – |
| 40 | Attleboro, . . . . . . | 19,480 | – | – | 33 | – | 1 | – | 2 | – | 2 | – | 2 | – |
| 41 | Westfield, . . . . . . | 19,456 | – | – | – | – | 7 | **1** | – | – | 5 | – | 287 | **2** |
| 42 | Watertown, . . . . . . | 18,123 | – | – | 1 | – | 7 | – | – | – | – | **1** | 1 | – |
| 43 | Leominster, . . . . . . | 17,675 | – | – | 4 | – | 3 | **1** | – | – | 4 | **2** | 1 | – |
| 44 | Melrose, . . . . . . . | 17,394 | – | – | 48 | – | 7 | – | 1 | – | – | – | 5 | – |
| 45 | Framingham, . . . . . . | 17,146 | – | – | 2 | – | 1 | – | – | – | 2 | **2** | – | – |
| 46 | Gardner, . . . . . . . | 17,116 | – | – | 30 | – | 28 | **2** | – | – | 1 | **1** | – | – |
| 47 | Woburn, . . . . . . . | 16,896 | – | – | 1 | – | 1 | – | – | – | 1 | **2** | – | – |
| 48 | Arlington, . . . . . . | 16,524 | – | – | 1 | – | 8 | **1** | – | – | – | – | 72 | – |
| 49 | Marlborough, . . . . . | 15,546 | – | – | – | – | 1 | – | – | – | – | – | 1 | – |
| 50 | Newburyport, . . . . . | 15,470 | – | – | 8 | – | 6 | **1** | – | – | 2 | **2** | 1 | – |
| 51 | Methuen, . . . . . . . | 15,137 | – | – | – | – | – | – | – | – | – | – | – | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH[1], NOVEMBER, 1917

| 19C Mumps. | | 38A Ophthalmia Neonatorum. | | 7 Scarlet Fever. | | 28-29 Tuberculosis, Pulmonary. | | 30-35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 8 Whooping Cough. | | 61A Cerebrospinal Meningitis. | | 100 Septic Sore Throat. | | 24 Tetanus. | | 75A Trachoma. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| 363 | – | 191 | 1 | 587 | 7 | 702 | 336 | 84 | 49 | 120 | 12 | 421 | 14 | 16 | 7 | 10 | 4 | 5 | – | 9 | – | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 52 | – | 66 | 1 | 119 | 1 | 236 | 93 | 18 | 13 | 17 | 1 | 149 | 4 | 5 | 1 | 1 | 1 | – | – | 7 | – | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 1 | – | 13 | – | 30 | – | 36 | 18 | 1 | 2 | 6 | 2 | – | – | 1 | – | – | – | 1 | – | – | – | 5 |
| *19* | – | *39* | – | *92* | *1* | *131* | *56* | *10* | *6* | *51* | *2* | *58* | *4* | *5* | *3* | *1* | *2* | *1* | – | – | – | 6 |
| 8 | – | 12 | – | 2 | – | 38 | 14 | – | 1 | 30 | 1 | 33 | 2 | 3 | 2 | – | – | – | – | – | – | 7 |
| – | – | 10 | – | 16 | – | 39 | 13 | 5 | 1 | 5 | 1 | 1 | – | – | – | – | – | 1 | – | – | – | 8 |
| 5 | – | 7 | – | 14 | 1 | 18 | 18 | 1 | 1 | 2 | – | 12 | 2 | – | – | – | – | – | – | – | – | 9 |
| 5 | – | 4 | – | 52 | – | 14 | 3 | 4 | 1 | 12 | – | 10 | – | 1 | – | – | 1 | – | – | – | – | 10 |
| 1 | – | 6 | – | 8 | – | 22 | 8 | – | 2 | 2 | – | 2 | – | 1 | 1 | 1 | 1 | – | – | – | – | 11 |
| *37* | – | *29* | – | *65* | *2* | *84* | *32* | *13* | *11* | *11* | *2* | *65* | *4* | – | – | *1* | – | – | – | – | – | 12 |
| 3 | – | 20 | – | 9 | – | 14 | 4 | 5 | 4 | 4 | – | 1 | – | – | – | – | – | – | – | – | – | 13 |
| – | – | 1 | – | 2 | – | 16 | 14 | 1 | 2 | 2 | – | 16 | – | – | – | – | – | – | – | – | – | 14 |
| 4 | – | 3 | – | 25 | 1 | 12 | 3 | 3 | – | 3 | 1 | 4 | 1 | – | – | – | – | – | – | – | – | 15 |
| 25 | – | 2 | – | 7 | – | 8 | 2 | 1 | – | – | – | 39 | 1 | – | – | – | – | – | – | – | – | 16 |
| 1 | – | 2 | – | 9 | – | 12 | 5 | – | 1 | – | 1 | – | 1 | – | – | – | – | – | – | – | – | 17 |
| 4 | – | 1 | – | 6 | – | 11 | 2 | 2 | 1 | 1 | – | 1 | – | – | – | 1 | – | – | – | – | – | 18 |
| – | – | – | – | 7 | 1 | 11 | 2 | 1 | 3 | 1 | – | 4 | 1 | – | – | – | – | – | – | – | – | 19 |
| *59* | – | *21* | – | *80* | – | *69* | *29* | *6* | *3* | *10* | – | *27* | – | *1* | *1* | *3* | *1* | – | – | *1* | – | 20 |
| 1 | – | 4 | – | 8 | – | 7 | 2 | 1 | 1 | 1 | – | 3 | – | – | – | – | – | – | – | 1 | – | 21 |
| 45 | – | 2 | – | 5 | – | 1 | – | – | – | 3 | – | 5 | – | – | – | – | – | – | – | – | – | 22 |
| 1 | – | 1 | – | 8 | – | 7 | 2 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 |
| 4 | – | 2 | – | 13 | – | 4 | 5 | – | – | 3 | – | 6 | – | – | – | – | – | – | – | – | – | 24 |
| 2 | – | 1 | – | 2 | – | 8 | 4 | 2 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | 25 |
| 1 | – | 4 | – | 1 | – | 7 | 2 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 26 |
| 2 | – | 2 | – | 9 | – | 5 | 4 | – | – | 2 | – | 1 | – | – | – | – | – | – | – | – | – | 27 |
| 1 | – | – | – | 10 | – | 7 | 5 | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | 28 |
| – | – | – | – | 13 | – | 4 | – | – | – | – | – | 10 | – | 1 | – | 1 | 1 | – | – | – | – | 29 |
| – | – | – | – | 5 | – | 3 | 2 | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 30 |
| – | – | 2 | – | 1 | – | 3 | 2 | – | – | – | – | – | – | – | 1 | 1 | – | – | – | – | – | 31 |
| 2 | – | 2 | – | 2 | – | 8 | – | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 32 |
| – | – | 1 | – | 3 | – | 5 | 1 | – | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | 33 |
| *61* | – | *14* | – | *108* | *2* | *70* | *37* | *11* | *6* | *14* | *2* | *52* | – | *3* | *1* | *4* | – | *2* | – | *1* | – | 34 |
| – | – | – | – | 2 | – | 1 | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | 35 |
| – | – | – | – | 3 | – | 2 | 1 | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 36 |
| – | – | – | – | 12 | – | 6 | 5 | – | – | – | – | – | – | 1 | 1 | – | – | – | – | – | – | 37 |
| 7 | – | 1 | – | – | – | 3 | – | – | – | 4 | 1 | 5 | – | – | – | – | – | – | – | – | – | 38 |
| – | – | 2 | – | 1 | – | 7 | 1 | 1 | – | – | – | – | – | 1 | – | – | – | – | – | – | – | 39 |
| – | – | – | – | 1 | – | 2 | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 40 |
| – | – | – | – | 11 | – | 5 | 3 | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 41 |
| – | – | 1 | – | 1 | – | 2 | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 42 |
| – | – | – | – | 2 | – | 1 | – | 2 | 1 | – | – | 2 | – | – | – | – | – | – | – | – | – | 43 |
| – | – | 3 | – | 6 | – | 4 | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 44 |
| – | – | – | – | 1 | – | 1 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 45 |
| 1 | – | – | – | 3 | – | 2 | 1 | – | – | 2 | – | 5 | – | – | – | – | – | 1 | – | – | – | 46 |
| – | – | – | – | 9 | – | 3 | 4 | – | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | 47 |
| – | – | 1 | – | 5 | – | 1 | 1 | – | 1 | 2 | – | 3 | – | 1 | – | – | – | – | – | – | – | 48 |
| – | – | – | – | 1 | – | 3 | 1 | 1 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | 49 |
| 2 | – | 1 | – | 1 | – | 1 | 1 | – | – | – | – | 1 | – | – | – | 3 | – | – | – | – | – | 50 |
| – | – | – | – | 1 | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 51 |

of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them for

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | CITIES AND TOWNS GROUPED IN ORDER OF POPULATION. | Population estimated as of July 1, 1917. | 63A Anterior Poliomyelitis. |  | 19A Chicken Pox. |  | 9 Diphtheria. |  | 19B German Measles. |  | 92 Lobar Pneumonia. |  | 6 Measles. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, . . . . . . | 14,930 | – | – | 1 | – | – | 1 | – | – | 1 | 1 | – | – |
| 53 | Weymouth, . . . . . . | 14,444 | – | – | – | – | 2 | – | – | – | – | – | – | – |
| 54 | Milford, . . . . . . . | 13,962 | – | – | – | – | 1 | – | – | – | – | 3 | 3 | – |
| 55 | Winthrop, . . . . . . | 13,918 | – | – | 11 | – | – | – | – | – | 1 | – | 3 | – |
| 56 | Greenfield, . . . . . . | 13,590 | – | – | 24 | – | 11 | – | – | – | 2 | 1 | – | – |
| 57 | Wakefield, . . . . . . | 13,389 | – | – | – | – | 1 | – | – | – | – | – | 2 | – |
| 58 | Adams, . . . . . . . | 13,302 | – | – | – | – | 4 | – | – | – | 1 | – | – | – |
| 59 | Plymouth, . . . . . . | 13,272 | – | – | 2 | – | 7 | 1 | – | – | – | – | 4 | – |
| 60 | Clinton, . . . . . . . | 13,243 | – | – | 1 | – | – | – | – | – | 1 | 1 | – | – |
| 61 | Webster, . . . . . . | 13,031 | – | – | 1 | – | 4 | – | – | – | 1 | – | – | – |
| 62 | Norwood, . . . . . . | 12,286 | – | – | 2 | – | 2 | – | – | – | – | – | – | – |
| 63 | West Springfield, . . . . . | 12,273 | – | – | – | – | 11 | – | – | – | – | – | – | – |
| 64 | Danvers, . . . . . . | 11,955 | – | – | 2 | – | 1 | – | – | – | 2 | – | – | – |
| 65 | Dedham, . . . . . . | 11,820 | – | – | 9 | – | 4 | – | – | – | – | – | – | – |
| 66 | Natick, . . . . . . . | 11,673 | – | – | – | – | – | – | – | – | 1 | – | 1 | – |
| 67 | Saugus, . . . . . . . | 11,189 | – | – | – | – | 2 | – | – | – | – | 2 | – | – |
| 68 | Easthampton, . . . . . | 10,430 | – | – | 2 | – | 7 | 1 | – | – | 1 | – | 1 | – |
| 69 | Athol, . . . . . . . | 10,330 | – | – | 2 | – | 1 | – | – | – | – | – | – | – |
| 70 | Winchester, . . . . . . | 10,312 | – | – | – | – | – | – | – | – | – | 2 | – | – |
| 71 | Bridgewater, . . . . . . | 10,129 | – | – | 2 | – | 1 | – | – | – | – | 1 | – | – |
| 72 | TOWNS, 5,000-10,000. | *355,823* | *2* | *2* | *73* | – | *106* | *5* | *5* | – | *15* | *29* | *56* | *1* |
| 73 | TOWNS, 2,500-5,000. | *181,232* | *1* | *1* | *9* | – | *29* | – | – | – | *1* | *13* | *13* | *1* |
| 74 | TOWNS UNDER 2,500. | *213,171* | *1* | – | *39* | – | *31* | – | *57* | – | *7* | *12* | *63* | *1* |
| 75 | STATE INFIRMARY, . . . . . |  | – | – | – | – | – | – | – | – | *1* | – | – | – |
| 76 | Camp Devens, . . . . . |  | – | – | – | – | *7* | – | – | – | *2* | – | *10* | – |

In addition to the above there occurred 2 cases of actinomycosis with 2 deaths, 1 case and 1 death in death in Woburn; 4 cases of dog-bite, 2 in Boston, 1 in Brockton and 1 in Holyoke; 3 cases of dysentery Brockton and 1 in Sutton with 1 death in Brockton; 1 case of pellagra in Northampton and 1 death in

## TO THE PUBLIC HEALTH — *Concluded.*

| 19C<br>Mumps. | | 38A<br>Ophthalmia Neonatorum. | | 7<br>Scarlet Fever. | | 28-29<br>Tuberculosis, Pulmonary. | | 30-35<br>Tuberculosis, Other Forms. | | 1<br>Typhoid Fever. | | 8<br>Whooping Cough. | | 61A<br>Cerebrospinal Meningitis. | | 100<br>Septic Sore Throat. | | 24<br>Tetanus. | | 75A<br>Trachoma. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| - | - | - | - | - | - | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 52 |
| - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 53 |
| - | - | - | - | 10 | - | 2 | 1 | 1 | - | 1 | - | 11 | - | - | - | - | - | - | - | - | - | 54 |
| 2 | - | 1 | - | 8 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 55 |
| 21 | - | - | - | 3 | - | 1 | - | 1 | 1 | - | - | 3 | - | - | - | - | - | - | - | - | - | 56 |
| 1 | - | 1 | - | 1 | - | 1 | - | 1 | - | 1 | - | - | - | - | - | - | - | - | - | 1 | - | 57 |
| 1 | - | 1 | - | - | - | 1 | - | - | - | 2 | 1 | - | - | - | - | - | - | - | - | - | - | 58 |
| - | - | - | - | 2 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 59 |
| 5 | - | - | - | 3 | - | - | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 60 |
| - | - | 1 | - | 1 | - | 1 | 1 | - | - | - | - | 15 | - | - | - | - | - | - | - | - | - | 61 |
| 1 | - | - | - | 6 | - | - | - | - | - | - | - | 5 | - | - | - | - | - | - | - | - | - | 62 |
| - | - | - | - | 2 | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 63 |
| 3 | - | - | - | 1 | - | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 64 |
| 7 | - | - | - | 3 | - | 1 | - | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | 65 |
| - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 66 |
| - | - | 1 | - | 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 67 |
| - | - | - | - | 1 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 68 |
| - | - | - | - | 1 | - | 1 | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 69 |
| - | - | - | - | - | - | 2 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 70 |
| - | - | - | - | 3 | - | - | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 71 |
| *1* | - | *6* | - | *58* | *1* | *42* | *23* | *11* | *3* | *5* | *2* | *44* | *1* | - | - | - | - | - | - | - | - | 72 |
| *5* | - | *2* | - | *8* | - | *10* | *8* | *4* | *1* | *2* | - | *15* | - | *1* | - | - | - | - | - | - | - | 73 |
| *15* | - | *1* | - | *27* | - | *14* | *25* | *2* | *4* | *4* | - | *9* | *1* | - | *1* | - | - | *1* | - | - | - | 74 |
| - | - | - | - | - | - | *10* | *15* | *8* | - | - | *1* | *2* | - | - | - | - | - | - | - | - | - | 75 |
| *3* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 76 |

Danvers and 1 case and 1 death in Westwood; 4 cases of anthrax, 1 in Boston and 3 in Woburn with 1 in Barnstable with 3 deaths, 1 in Clinton, 1 in Holyoke and 1 in Williamstown; 2 cases of malaria, 1 in Danvers; and 1 case of smallpox in Boston.

## NOTES ON BIOLOGIC PRODUCTS FROM THE STATE DEPARTMENT OF HEALTH.

### Diphtheria Antitoxin.

All the good parchment paper used in dialyzing serum was formerly obtained from Belgium. When this supply was cut short on account of the war, it became necessary to issue unconcentrated normal serum. In consequence of the larger amount of foreign protein injected into the body with the normal antitoxic serum, the number and severity of urticarial rashes which accompany serum sickness became manifest Recently it has been possible to obtain parchment paper, and all the serum is now dialyzed and concentrated, and there should, therefore, be an improvement in the matter of serum sickness following the injection of antitoxins.

Formerly, prophylactic doses of diphtheria antitoxin were issued in 750-unit packages and 1,500-unit packages. Hereafter, these two packages will be discontinued and a prophylactic dose containing 1,000 units will take their place. This is usually a sufficient immunizing dose for a child. There are now available, therefore, packages of 1,000, 3,000, 6,000 and 12,000 units, the latter for hospital use only.

Request is again made that all empty bottles, vials, boxes, cartons, unused vaccine tubes and containers be returned to the laboratory. The increased cost of these supplies makes it imperative to practice the strictest economy.

### Diphtheria Prophylactic.

The Division of Biologic Laboratories is now also prepared to issue under certain restrictions the toxin-antitoxin mixture for active immunization against diphtheria. This is a useful method for protecting adults as well as children. It should be used only in conjunction with the Schick test. Application for Schick material and toxin-antitoxin mixture should be made to the State District Health Officers.

### Typhoid and Paratyphoid Prophylactic.

Attention is invited to the fact that the laboratory now makes and distributes the triple vaccine, containing *Bacillus typhosus, Bacillus paratyphosus A* and *Bacillus paratyphosus B.* The reaction following this triple vaccine is not appreciably different from that of the vaccine containing typhoid bacilli alone. It protects against both typhoid fever and paratyphoid fever, and is therefore recommended. Those who have been vaccinated against typhoid fever may subsequently be vaccinated with paratyphoid vaccines, and vice versa. These vaccines may be had singly or in combination, but it saves time and trouble to give the three in one.

## LABORATORY AIDS FOR DIAGNOSIS AND TREATMENT OF COMMUNICABLE DISEASES.

The State Department of Health maintains, as a part of its regular work, bacteriological and biological laboratories to aid in the control and prevention of communicable diseases. The facilities of these laboratories and certain supplies furnished by them are available to physicians for the free use of residents of the Commonwealth. Upon requisition these supplies are sent to local boards of health, from whom physicians may obtain them as required.

The following supplies are available: —

Diphtheria antitoxin, 4 sizes: 1,000, 3,000, 6,000 and 12,000 units.
Antityphoid vaccine (3 ampoules in each set).
Triple vaccine, to secure immunity against typhoid, paratyphoid A and paratyphoid B.
Smallpox vaccine.
Antimeningitis serum.
Antirabic treatment (secured by special arrangement in each case through District Health Officers).
Outfits for diphtheria cultures.
Outfits for Widal tests (typhoid fever).
Outfits for culture tests (typhoid fever).
Schick tests for determining diphtheria immunity, and toxin-antitoxin mixture for producing active immunization against diphtheria (both of these products on application to State District Health Officers).
Outfits for prevention of ophthalmia (silver nitrate in wax ampoules).
Outfits for sputum.

The following examinations are made for diagnosis at the laboratories, the specimens being sent to the laboratories by the physicians in attendance: —

At Bacteriological Laboratory, Room 527, State House: —

Culture test for typhoid, blood (of value only in first five days).
Widal test for typhoid, blood (rarely positive before fifth day).
Culture test for typhoid, stools, urine (probable carrier cases chiefly).

Sputum for tubercle bacilli (consumption).
Pus smears for gonococci.
Blood smears for malaria.
Throat and nose cultures for diphtheria.

At Wassermann Laboratory, Harvard Medical School, Longwood Avenue, Boston, Wassermann test for syphilis: —

Specimens are received in Wassermann Laboratory when submitted by direction of the District Health Officers or local boards of health. Samples of blood are taken at the laboratory on Tuesdays and Thursdays from 3 to 5 P.M. There is no charge for this class of work.

In addition to the above work examinations are made for rabies, glanders and anthrax for the Department of Animal Industry. Specimens to receive attention must be submitted through direction of the Department of Animal Industry.

Aside from the above facilities having to do with communicable diseases, examinations of pathological tissues for diagnosis of cancer, etc., will be made at the Laboratory of the Harvard Cancer Commission, Harvard Medical School, Longwood Avenue, Boston.

(Containers and instructions for submitting specimens may be obtained from the District Health Officers or directly from the Department at the State House.)

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner, Allan J. McLaughlin, M.D.

| | |
|---|---|
| Division of Administration, | Acting Director, Lyman A. Jones, M.D. |
| Division of Sanitary Engineering, | Director and Chief Engineer,<br>X. H. Goodnough, C.E. |
| Division of Communicable Diseases, | Director, Eugene R. Kelley, M.D. |
| Division of Water and Sewage Laboratories, | Director and Chemist, H. W. Clark. |
| Division of Biologic Laboratories, | Director and Pathologist,<br>Milton J. Rosenau, M.D. |
| Division of Food and Drugs, | Director and Analyst,<br>Hermann C. Lythgoe. |
| Division of Hygiene, | Director, Lyman A. Jones, M.D. |

## Public Health Council.

Allan J. McLaughlin, M.D., *Chairman.*

Wm. T. Sedgwick, Ph.D.
George C. Whipple, S.B.
David L. Edsall, M.D.
Joseph E. Lamoureux, M.D.
Wm. J. Gallivan, M.D.
John T. Wheelwright.

## State District Health Officers.

| | |
|---|---|
| The Southeastern District, | Adam S. MacKnight, M.D., Fall River. |
| The Eastern District, | Merrill E. Champion, M.D., Wollaston. |
| The Northeastern District, | Arthur A. Brown, M.D., Swampscott. |
| The North Midland District, | Charles E. Simpson, M.D., Lowell. |
| The South Midland District, | William W. Walcott, M.D., Natick.[1]<br>George T. O'Donnell, M.D., Waltham.[2] |
| The Wachusett District, | Francis A. Finnegan, M.D., Ayer. |
| The Connecticut Valley District, | John S. Hitchcock, M.D., Northampton. |
| The Berkshire District, | Howard A. Streeter, M.D., Pittsfield. |

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[1] Leave of absence, military service.

[2] At a meeting of the Public Health Council of the State Department of Health on Oct. 30, 1917, it was voted that Dr. George T. O'Donnell be appointed as permanent State District Health Officer.

# PUBLIC HEALTH BULLETIN

ISSUED MONTHLY
BY THE
STATE DEPARTMENT OF HEALTH
OF MASSACHUSETTS

February, 1918

Vol. 5, No. 2

ALLAN J. McLAUGHLIN, M.D., *Commissioner*

*The Common Health of the Commonwealth*

Entered as Second-class Matter Oct. 26, 1914, at the Post Office at Boston, Mass.,
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Publication of this Document
approved by the
Supervisor of Administration.

# FOOD FOR CHILDREN FROM TWO TO SIX YEARS OLD.[1]

## INTRODUCTION.

In these times, when food conservation is a paramount necessity in winning the war, and when the prices of foods are such that quantity is restricted, it is essential that careful selection be made in order that this restricted diet may contain food elements in proper proportion.

There is grave danger that in attempting to keep the food bill within the limits of the family purse, a diet may be selected lacking in some of the essentials to proper growth and development of children. This little pamphlet is issued by the State Department of Health, through its committee on child conservation, in order that mothers may know how to select a proper dietary for their children, containing all the necessary elements at a low price.

It is our duty to the nation to cut our consumption of food to the minimum. It is our duty to ourselves, and especially to the children, to see that the proper proportions of fats, starches and proteids are maintained. Fortunately, it is possible to fulfill both these duties, and a careful study of this little booklet will show the way.

A. J. McLAUGHLIN,
*Commissioner of Health.*

BOARD OF FOOD ADMINISTRATION, Jan. 15, 1918.

Dr. RICHARD SMITH, *Secretary, Child Conservation Committee, State Department of Health, State House, Boston.*

MY DEAR DOCTOR: — I have read your article and suggestions in regard to "Food for Children from Two to Six Years of Age," and heartily approve the same, and believe it will be of a great help to us and to the children.

Yours very truly,

H. B. ENDICOTT,
*Food Administrator.*

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[1] Reprints of this article are available for distribution.

## FOOD FOR CHILDREN FROM TWO TO SIX YEARS OLD.

IN the present war time it is most important that children be properly fed and that, so far as possible, economy be practiced.

The following food tables have been compiled by the State committee on child conservation, with the assistance of the department of household economics of Simmons College, and are issued in co-operation with the State Food Administration.

The purpose of food is to furnish heat for the body and to provide material for growth and for replacing substances used up in daily activities.

Food is composed of fat, carbohydrate, protein, salts and water. In general, it may be said that fats and carbohydrates furnish heat, and the protein and salts furnish material for growth and repair.

The amount of heat given off by food is measured in heat units or calories; a calorie is the amount of heat required to raise the temperature of 1 liter (about 1 quart) of water 1° C. Children from two to four years of age require from 1,200 to 1,400 calories daily, and children from four to six years of age, from 1,400 to 1,600 daily. Fat children require somewhat less, and active, thin children require more than the average. Large and active children require calories corresponding with their size rather than their age.

### List of the Foods allowed for a Child Two to Four Years Old.

*Milk.*

This is the principal article of diet.

*Fruits.*

Baked apples.
Apple sauce.
Stewed prunes.
Stewed peaches.
Oranges.
Stewed pears.
Baked pears.

*Cereals.*

Oatmeal.
Pettijohn.
Cream of Wheat.
Wheatena.
Quaker Oats.
Ralston.
Cracked wheat.
Wheat Germ.
Samp.
Germea.
Malt Breakfast Food.
Farina.
Hominy.

### *White Vegetables.*

Potato (baked).
Rice.
Macaroni.
Spaghetti.

### *Green Vegetables.*

String beans.
Asparagus.
Lettuce.
Celery, stewed.
Carrots.
Spinach.
Beet greens.
Green peas.
Beets.
Swiss chard.

### *Bread.*

Stale bread (white, whole wheat, graham, oatmeal, rye or corn) with butter.
Crackers.

### *Desserts.*

Junket.
Custard.
Tapioca cream.
Apple tapioca.
Prune whip.
Cooked fruit.
Simple jelly.
Sago.
Corn starch pudding.
Rice pudding (without raisins).
Bread pudding (without raisins).
Ice cream.

### *Protein Foods.*

Eggs, soft-boiled or coddled.
Fresh fish (boiled).
Roast chicken.
Boiled chicken.
Mutton.
Steak.
Lamb (roast or chop).
Roast beef.

### *Soups.*

Beef.
Creamed vegetable.
Mutton.
Vegetable.
Chicken.

### *Fats.*

Butter.
Oleomargarine.
Olive oil.

## List of Foods allowed for a Child Four to Six Years Old, in Addition to those of a Child from Two to Four Years Old.

### *Fruits.*

Fresh apple.
Bananas.
White grapes.
Concord grapes.
Stewed apricots.
Peaches.

*Cereals.*

Puffed rice.
Post Toasties.
Puffed Wheat.
Shreddded Wheat Biscuit.
Corn flakes.
Corn meal.
Force.
Grape Nuts.

*White Vegetables.*

Potato (mashed or boiled).
Sweet potato (baked).

*Green Vegetables.*

Shell beans.
Onions.
Cabbage.
Summer squash.
Squash.
Cauliflower.

*Bread.*

French rolls.
Stale muffins.

*Beverages.*

Cocoa shells to drink.

*Desserts.*

Graham crackers.
Ginger snaps.
Simple cookies.

*Protein Foods.*

Broiled fish.
Pea purée.
Bean purée.
Cottage cheese.

*Fats.*

Peanut butter.
Crisp bacon.
Top milk.

To select a proper diet from these lists it is necessary to provide the required number of calories, and also to bear in mind certain other facts which are mentioned in connection with the tables given below. Also about three glasses of water should be taken daily.

## PROTEINS.

Growing children require protein in their food, from which new body tissues may be built. About 15 per cent. of the calories (180 to 210 calories daily from two to four years, and 210 to 240 calories from four to six years) should be in this form. It is supplied in large part by animal foods, such as milk, eggs and meat, and in small part by such vegetables as peas and beans. Most children take about 25 ounces (750 cubic centimeters) of cow's milk daily, and this furnishes about one-half of protein needed.

### *Foods Rich in Protein.*

These are arranged in the order of increasing cost of equal fuel portions. If economy is desirable choose foods near the top of the list.

| | 100 Caloric Portion. | Protein Calories. |
|---|---|---|
| Bean purée, | ⅓ cup, | 26 |
| Pea purée, | ⅓ cup, | 26 |
| Milk, | ⅔ cup (5 ounces), | 19 |
| Cottage cheese, | 5½ tablespoonfuls, | 76 |
| Haddock, | Approximately ½ cup, | 96 |
| Codfish, | Approximately ½ cup, | 96 |
| Flounder, | Approximately ½ cup, | 90 |
| Peas (canned or green), | ¾ cup (drained), | 26 |
| Roast lamb, | Slice 3½ x 4½ inches, | 40 |
| Lamb chop, | Lean meat from 1 chop (piece 2 x 2 x ½ inch). | 40 |
| Steak (lean rump), | Slice 2½ x 1 x 1 inch, | 48 |
| Roast beef (rib), | Slice 5 x 4 x ⅛ inch, | 46 |
| Egg, | 1⅓ eggs, | 36 |
| Chicken, | Slice 4 x 2½ x ¼ inch, | 50 |

## FATS.

Fats are necessary for nutrition, and have a high heat value. The commonest source of fat is cow's milk. Other sources are as follows: —

### *Foods Rich in Fat.*

These are arranged in the order of increasing cost of equal fuel portions.

| | 100 Calorie Portion. | Protein Calories. |
|---|---|---|
| Cottonseed oil, | 1 tablespoonful (scant), | None. |
| Peanut butter, | 1 tablespoonful, | 19. |
| Oleomargarine, | 1 tablespoonful, | Negligible. |
| Olive oil, | 1 tablespoonful (scant), | None. |
| Butter, | 1 tablespoonful, | Negligible. |
| Top milk (7 per cent. fat), | ½ cup (scant), | 13. |
| Bacon, | 6 small slices, | Negligible. |

## CARBOHYDRATES.

Carbohydrates ordinarily furnish a large proportion of the calories in the diet. They are derived from cereals, vegetables, breadstuffs, desserts, fruit and sugar. Since starch is converted into sugar by digestion, extra sugar in the food is not necessary; indeed, a large amount of extra sugar is harmful.

## CEREALS.

The cereals are not arranged strictly in the order of cost of equal fuel portions. Bulk cereals are less expensive than package cereals, and much less expensive than the "ready to eat" cereals. All cereals above the heavy line should be thoroughly cooked (four to six hours), even though they are advertised as partially cooked. The use of the fireless cooker is advised.

| | 100 Calorie Portion. | Protein Calories. |
|---|---|---|
| Corn meal, | From ⅔ cup to 1 cup (cooked), | From 9 to 13. Oat preparations a little more. For all practical purposes an average figure of 11 may be used. |
| Hominy, | | |
| Samp, | | |
| Oatmeal, | | |
| Quaker Oats, | | |
| Wheatena, | | |
| Malt Breakfast Food, | | |
| Wheat Germ, | | |
| Pettijohn, | | |
| Cream of Wheat, | | |
| Farina, | | |
| Germ meal, | | |
| Cracked wheat, | | |
| Ralston, | | |
| Pearl barley, | | |
| Puffed Wheat, | From 1¼ to 1½ cups, | From 9 to 13. For all practical purposes an average figure of 11 may be used. |
| Force, | | |
| Corn flakes, | | |
| Puffed Rice, | | |
| Post Toasties, | | |
| Shredded Wheat, | 1 biscuit, | |
| Grape Nuts, | 3 tablespoonfuls, | |
| Barley flour, | 4 tablespoonfuls (uncooked), | |

## WHITE VEGETABLES.

There is very little difference in cost of equal fuel portions.

| | 100 Caloric Portion. | Protein Calories. |
|---|---|---|
| White potato, boiled or baked, | 1 medium, | 11 |
| Sweet potato, baked, | ½ medium, | 6 |
| Rice, steamed, | ¾ cup, | 9 |
| Macaroni, | ⅔ cup, | 15 |
| Spaghetti, | ⅔ cup, | 15 |

## BREADSTUFFS.

There is very little difference in cost of equal fuel portions. Crackers are usually noticeably more expensive than bread.

| | 100 Calorie Portion. | Protein Calories. |
|---|---|---|
| Graham bread, | 2 slices 3 x 3½ x 3/16 inch thick for heavy, close bread; ⅜ inch thick for light, fluffy bread. | Approximately 14. |
| Oatmeal bread, | | |
| Rye bread, | | |
| Entire wheat bread, | | |
| White bread, | | |
| French rolls, | One roll, | 12 |
| Graham crackers, | 2 or 3 crackers, | 9 |
| Soda crackers, | 4 crackers, | 10 |
| Uneeda biscuit, | 4 crackers, | 10 |
| Muffins, corn-meal, | ¾ muffin, | 13 |
| Ginger snaps, | 3 or 4, | 10 |

## DESSERTS.

These desserts are about equally expensive except for custard and ice cream, which are distinctly more expensive than the others.

| | 100 Calorie Portion. | Protein Calories. |
|---|---|---|
| Blanc-mange (corn starch), | ¼ cup, | 9 |
| Apple tapioca, | ½ cup, | Negligible. |
| Rice pudding, | ½ cup (scant), | 18 |
| Bread pudding, | ½ cup, | 18 |
| Junket, | ⅔ cup, | 19 |
| Prune whip, | ⅓ cup, | 10 |
| Cup custard, | ⅓ cup, | 17 |
| Ice cream, | ⅛ to ¼ cup, | 4 to 6 |

## SALTS.

Salts are necessary to the body, especially to form the growing skeleton. Many of the salts are supplied in large amounts by cow's milk. It does not, however, contain sufficient quantities of iron. Iron is present in meat and yolk of eggs, and in many of the green, or "fodder" or fiber, vegetables and in fruits.

The green vegetables also serve the purpose of furnishing a bulky residue, which counteracts constipation. They are used for their iron content, their laxative properties and their "vitamin," or growth-producing, quality, and should be included in each day's food despite their high cost. They furnish also a small number of calories. For little children vegetables should be rubbed through a sieve, and for older children they should be chopped fine. Stewed fruits should have little or no sugar added.

## Green or "Fodder" Vegetables.

The vegetables are arranged in the order of increasing cost. Those near the top of the list are much less expensive than those near the bottom.

| | Daily Allowance. | Calorie Value. |
|---|---|---|
| Beets, | 1½ tablespoonfuls (rounding), | The root vegetables average about 20 calories for this amount, and other vegetables about 10 calories. |
| Carrots, | | |
| Onions, | | |
| Cabbage, | | |
| Squash, | | |
| Spinach, | | |
| String beans, | | |
| Beet greens, | | |
| Swiss chard, | | |
| Asparagus, | | |
| Celery, | | |
| Cauliflower, | | |
| Lettuce, | | |

## Fruits.

These are arranged in order of increasing cost of equal fuel portions. The fruits near the top of the list are much less expensive than those near the bottom.

| | Daily Allowance. | Total Calories. | Protein Calories. |
|---|---|---|---|
| Prunes, stewed, | 4 or 5, | 100 | Negligible. |
| Peaches, dry, | 1 or 2 (cooked), | 25 or 50 | Negligible. |
| Apple, fresh, | 1, | 75 | Negligible. |
| Apple sauce, | 2 tablespoonfuls, | 33 | Negligible. |
| Banana, | 1, | 100 | Negligible. |
| Grapes, Concord, | 8 to 10, | 35 | Negligible. |
| Apricot, dried, | 2 to 4 halves, | 25 or 50 | Negligible. |
| Pear, baked, | 1, | 75 | Negligible. |
| Peaches, fresh, | 1 or 2 (cooked), | 25 or 50 | Negligible. |
| Orange, | 1 medium, | 50 | Negligible. |
| Grapes, Malaga, | 8 to 10, | 50 | Negligible. |

## SAMPLE DIETS.

Three sample diets are given below as suggestions to aid in arranging others.

*Menu for Child Two to Four Years old.*

| | | Amount. | Total Calories. | Protein Calories. |
|---|---|---|---|---|
| 7 A.M., | Orange juice, | 4 tablespoonfuls, | 24 | – |
| | Oatmeal, | 4 tablespoonfuls, | 40 | 7 |
| | Bread, | 2 slices, | 100 | 14 |
| | Butter, | 1 teaspoonful, | 33 | – |
| | Milk, | 10 ounces, | 210 | 40 |
| 10 A.M., | Milk, | 8 ounces, | 168 | 32 |
| | Cracker, | 1, | 25 | 2 |
| 1 P.M., | Egg, | 1, | 70 | 25 |
| | Baked potato, | 1 medium, | 100 | 11 |
| | Spinach, | 1½ tablespoonfuls, | 10 | – |
| | Bread, | 1 slice, | 50 | 7 |
| | Butter, | ½ teaspoonful, | 16 | – |
| | Junket, | 2 tablespoonfuls, | 16 | 3 |
| 5.30 P.M., | Rice, | 4 tablespoonfuls, | 33 | 3 |
| | Bread, | 2 slices, | 100 | 14 |
| | Butter, | 1 teaspoonful, | 33 | – |
| | Milk, | 8 ounces, | 168 | 32 |
| | Apple sauce, | 2 tablespoonfuls, | 33 | – |
| | | | 1,229 | 190 |

A more economical menu with essentially the same food value would be provided if the following substitutions were made: —

For the orange juice substitute the pulp and juice of two prunes (cooked without sugar).

For the egg substitute a small portion of boiled cod or haddock.

For the spinach substitute carrots.

The menu for a child four to six years need not differ materially from that of the younger child except in quantity. If two children eat together it is usually more convenient to serve food which is suitable for the younger child rather than to provide two menus. The following list shows how the preceding menu should be adjusted for a child four to six years old: —

*Menu for Child Four to Six Years old.*

| | | Amount. | Total Calories. | Protein Calories. |
|---|---|---|---|---|
| 7.30 A.M., | Orange, | 1 medium, | 75 | - |
| | Oatmeal, | 6 tablespoonfuls, | 60 | 8 |
| | Bread, | 2 slices, | 100 | 14 |
| | Butter, | 1 teaspoonful, | 33 | - |
| | Milk, | 10 ounces, | 210 | 40 |
| 10 A.M., | Milk, | 8 ounces, | 168 | 32 |
| | Crackers, | 2 crackers, | 50 | 7 |
| | Butter, | ½ teaspoonful, | 16 | - |
| 12.30 P.M., | Egg, | 1, | 70 | 25 |
| | Baked potato, | 1 medium, | 100 | 11 |
| | Spinach, | 1½ tablespoonfuls, | 10 | - |
| | Bread, | 2 slices, | 100 | 14 |
| | Butter, | 1 teaspoonful, | 33 | - |
| | Junket, | 2 tablespoonfuls, | 16 | 3 |
| 5.30 P.M., | Rice, | ½ cup, | 66 | 6 |
| | Bread, | 3 slices, | 150 | 21 |
| | Butter, | 1½ teaspoonfuls, | 48 | - |
| | Milk, | 8 ounces, | 168 | 32 |
| | Apple sauce, | 4 tablespoonfuls, | 66 | - |
| | | | 1,539 | 213 |

If there is not a younger child to consider, a child four to six years old may properly have a more varied diet (for list, see page 37).

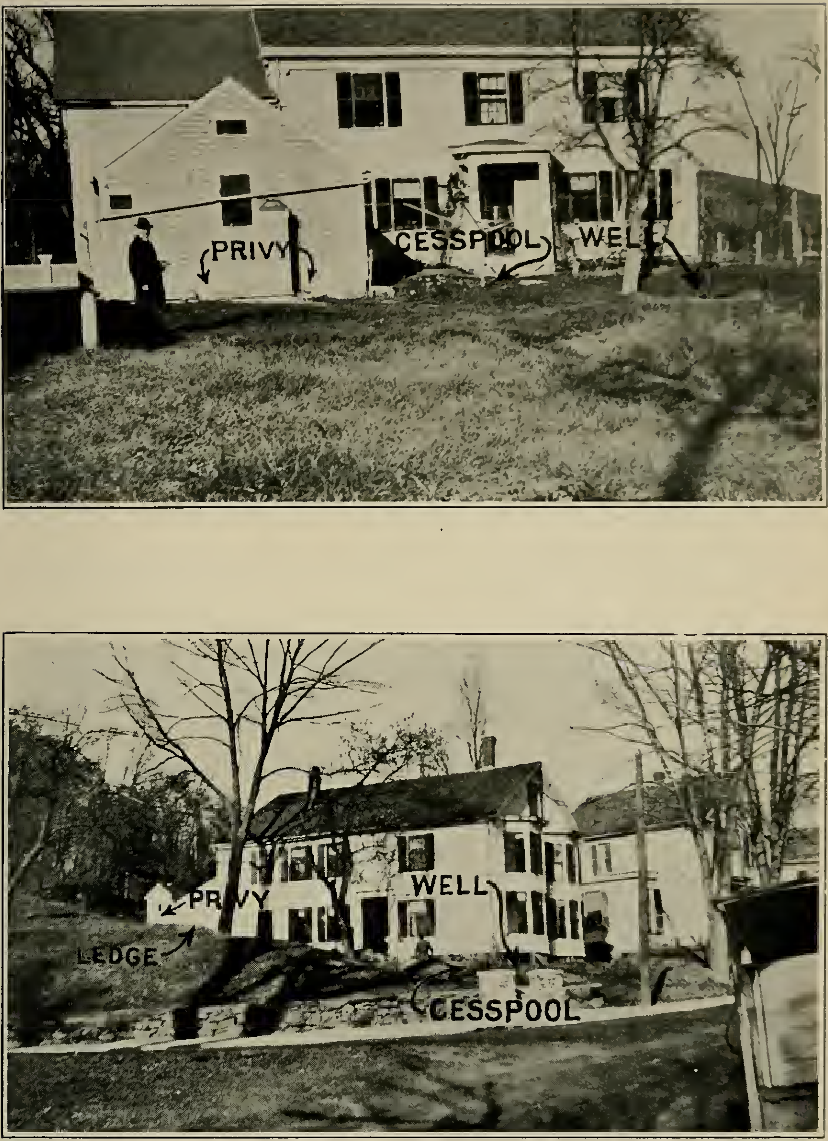
| | | Amount. | Total Calories. | Protein Calories. |
|---|---|---|---|---|
| 7.30 A.M., | Stewed prunes, | 3, | 60 | - |
| | Shredded Wheat, | 1, | 100 | 12 |
| | Stale muffin, | 1, | 100 | 14 |
| | Butter, | 1 teaspoonful, | 33 | - |
| | Milk, | 10 ounces, | 210 | 40 |
| 10 A.M., | Milk, | 8 ounces, | 168 | 32 |
| | Bread, | 1 slice, | 50 | 7 |
| | Butter, | ½ teaspoonful, | 16 | - |
| 12.30 P.M., | Broiled fish, | Small serving, | 75 | 72 |
| | Sweet baked potato, | 1 small, | 100 | - |
| | Onions, | 1½ tablespoonfuls, | 20 | - |
| | Bread, | 1 slice, | 50 | 7 |
| | Butter, | ½ teaspoonful, | 16 | - |
| | Corn starch pudding, | 2 tablespoonfuls, | 50 | 5 |
| 5.30 P.M., | Hominy, | ¾ cup, | 100 | 9 |
| | Bread, | 2 slices, | 100 | 14 |
| | Butter, | 1 teaspoonful, | 33 | - |
| | Milk, | 8 ounces, | 168 | 32 |
| | Baked apple, | 1, | 75 | - |
| | Plain cookies, | 1, | 50 | 8 |
| | | | 1,575 | 252 |

## EXAMINATION OF DOMESTIC WATER SUPPLIES.

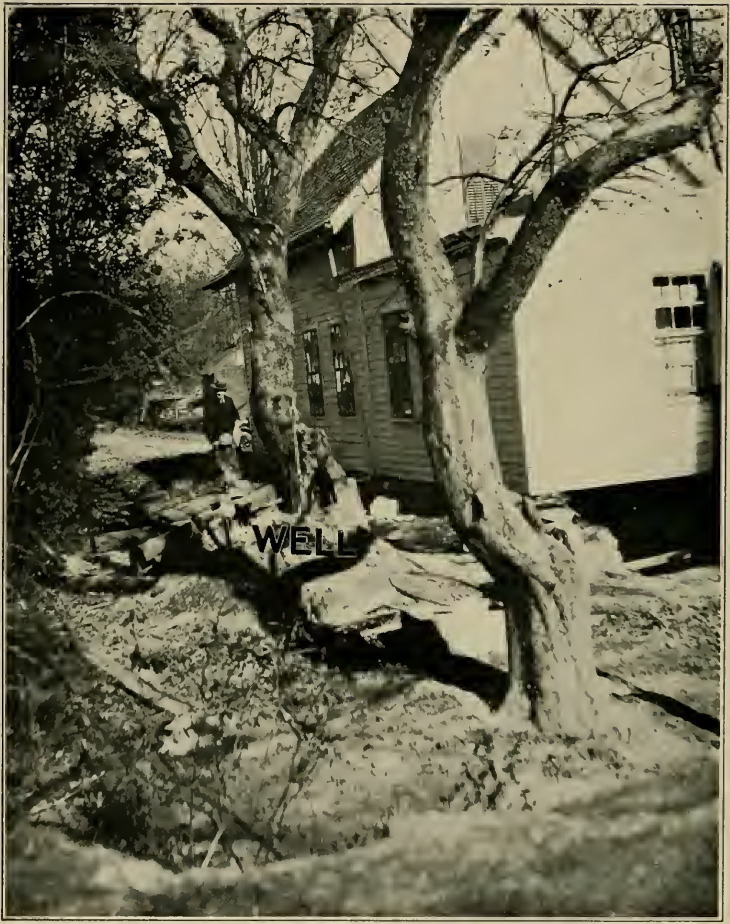
IN July, 1917, the State Department of Health, acting under the authority of a resolve passed by the Legislature earlier in the year, announced that it would undertake the examination and analysis of well and spring waters used as a source of domestic supply.

During the balance of the year, 69 requests for such analyses were received from various parts of the State.

The majority of supplies for which requests were received have been inspected, and samples taken. Owing to a shortage of engineers it has thus far been impracticable to visit all the places requested. These will receive attention later.



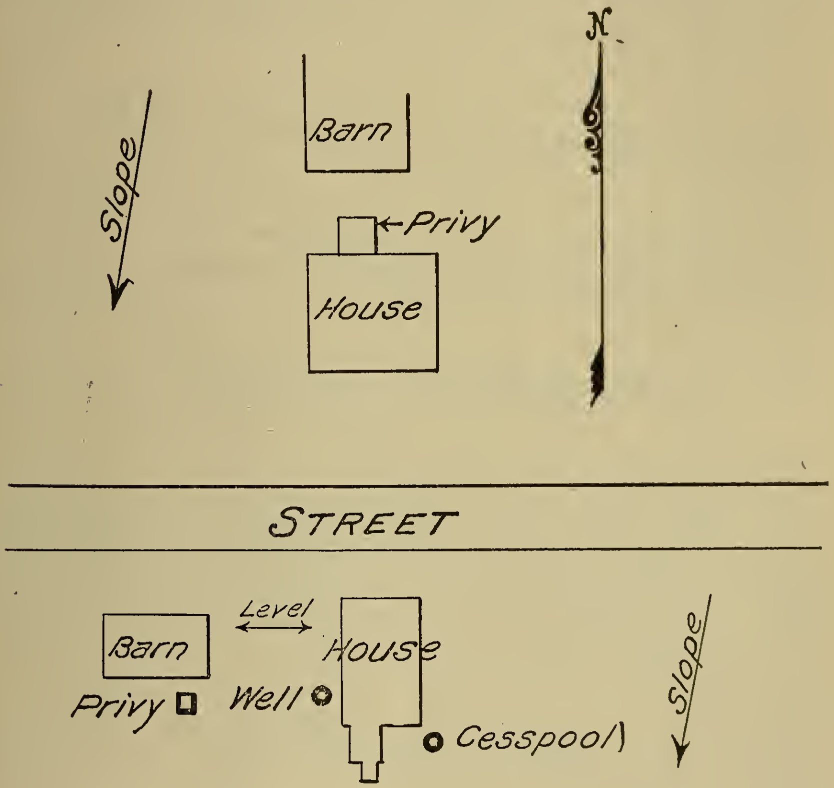
Illustrating poor locations for wells.



Illustrating poor location for well.

A study of the inspection reports and analyses made discloses the conditions which may well lead every householder dependent upon a private domestic water supply to consider seriously the possibility of its pollution.

This conclusion is reasonable, even though the number of supplies examined was comparatively small, since they were taken in 27 different cities and towns, from all parts of the State, showing that the conditions noted were not confined to any particular locality.



MAP SHOWING LOCATION OF A WELL USED FOR HOUSEHOLD PURPOSES. SCALE 1" = 100'.

About three-quarters of the supplies were shown to be badly polluted. Factors which contributed to such pollution were near-by privies and cesspools, sink drains running near the water supply, the close proximity of barnyards and manure piles, pollution from surface drainage, etc.

The only excuse for many of the conditions noted would seem to be that purity of water supply and its relation to healthfulness had been wholly disregarded for the sake of convenience and accessibility.

The work thus far carried out would seem to indicate that in some communities, owing to underlying ledge, character of soils, and proximity of buildings, the securing of a safe domestic water supply is questionable or impossible; that in any case the location of the cesspool or privy and other sources of pollution should be carefully considered in their relation to possible pollution of domestic water supplies.

The general elimination of polluted supplies such as have been found during these examinations would diminish rural typhoid, and, to judge from experience, would also tend to lessen the amount of sickness in general among the users of such polluted supplies.

The illustrations on another page afford examples of conditions often found. They require no comment.

## DR. McLAUGHLIN'S RESIGNATION.

It is with deep regret that the "Bulletin" announces the resignation of Dr. Allan J. McLaughlin, State Commissioner of Health. Dr. McLaughlin came to Massachusetts in November, 1914, having been granted a leave of absence from the United States Public Health Service, to take up the work here. He has now been recalled to that service as assistant surgeon general in charge of the Division of Interstate Quarantine, in which capacity he will have control and supervision of that part of the service activities directed towards the prevention of the spread of communicable disease in the United States, and will also be responsible for the sanitation of extra-cantonment zones throughout the country.

Dr. McLaughlin rendered distinguished service in the Philippines, in France and Germany, and as chief sanitary expert of the International Joint Commission of the United States and Canada on the Pollution of Boundary Waters. His brilliant work in Massachusetts has given to public health work a new impetus and meaning, and his accomplishments in new and old fields of endeavor have more than fulfilled the expectations of those who have watched his career in the past. He entered upon his duties here under peculiarly trying and difficult conditions, with the added responsibility of proving the worth of a modern system of public health administration which placed the functions of a State health department under the control of one executive, with an advisory council. Under his hand, the value of such a plan has been demonstrated and is no longer an experiment.

He has won the loyalty and co-operation of the medical profession in Massachusetts and of the boards of health throughout the Commonwealth. The progress and development of the national health work under his direction will be watched with interest and pride.

## DR. KELLEY'S APPOINTMENT AS COMMISSIONER OF HEALTH.

Governor McCall's appointment of Dr. Eugene R. Kelley as Commissioner of Health and successor to Dr. McLaughlin, to take effect April 1, 1918, is a source of much satisfaction to all interested in the welfare of public health in Massachusetts. Dr. Kelley's scientific training and his experience as State Commissioner of Health of Washington has well fitted him to take up the arduous and exacting duties of State Commissioner of Health of Massachusetts. His work as director of the Division of Communicable Diseases of this Department for the past three years has gained for him the co-operation and assistance of the medical profession and local boards of health in Massachusetts, a most valuable asset in the work he is about to take up, while his close association with Dr. McLaughlin is an added guarantee of his ability to carry on the work so well begun.

## DEPARTMENT APPOINTMENT.

For many years the State Board of Health and later the State Department of Health through its Food and Drug Laboratory has been active in protecting the purity of foods distributed throughout the Commonwealth; about 10,000 samples are examined annually.

For some time it has been realized that it was desirable to undertake certain work relating to the economic side of the food question, especially making available popular information as to the uses and food values of our various foodstuffs.

For this purpose the Department has employed Mrs. Alzira W. Sandwall. A portion of her work will consist of preparing articles relating to food. Her services will also be available as a speaker on food subjects. The Department will undertake to answer queries as to food. Communications should be addressed to the State Department of Health.

## DISTRIBUTION OF BLANK FORMS FOR THE NOTIFICATION OF CASES OF SYPHILIS AND GONORRHEA.

Owing to freight embargoes and the seizure of paper by the United States government designed for the printing of certain of the forms to be used in notifying this Department of cases of syphilis and gonorrhea, the printer was unable to fill his contract to supply this Department with the full quantity of the necessary forms in time to distribute them to physicians throughout the Commonwealth prior to Feb. 1, 1918, when these diseases became reportable. As quickly as the various lots of the necessary supplies are delivered to this office, however, they are sent out, and it is hoped that by the 15th of March all registered physicians in the State will have received the requisite blank forms for the handling of reports of cases of syphilis and gonorrhea.

## REPORT OF DIVISION OF FOOD AND DRUGS.

During the month of January, 1918, samples were collected in 36 cities and towns.

There were 408 samples of milk examined, of which 139 were below the legal standard, 22 samples were skimmed milk not properly labeled, and 40 samples contained added water.

There were 310 samples of food examined, of which the following were adulterated: 1 sample of oleomargarine sold as butter (submitted by a local inspector), 1 sample of cider containing benzoic acid and not so labeled, 1 sample of condensed milk below the legal standard, 2 samples of cream below the legal standard, 85 samples of old eggs sold as fresh, 1 sample of lemon extract deficient in lemon oil, 1 sample of fish containing added bone, 1 sample of honey which was entirely cane sugar syrup, 4 samples of compound lard not properly labeled, 1 sample of mincemeat containing benzoic acid and not so labeled, 4 samples of sausages containing starch in excess of 2 per cent., 3 samples of decomposed nuts, 1 sample of soaked oysters, 1 sample of peanut butter containing sand, 1 sample of soaked scallops, 2 samples of sugar, examined at the request of the owner, containing a foreign substance as the result of a fire, and 1 sample of vinegar low in acid.

There were 47 samples of drugs examined, of which 15 were adulterated. These consisted of 4 samples of camphorated oil, 10 samples of spirit of nitrous ether and 1 sample of spirit of peppermint deficient in the active ingredient.

The police departments submitted 21 samples of poisons and 7 samples of liquor for examination.

There were 57 convictions for violation of the laws, $875 in fines being imposed. William J. Carney of Danvers, on two counts, and Joseph Gamache of Leominster were convicted for violation of the milk laws. Wilbur E. Gould and George H. Wilson of Weathersfield, Vt., were convicted for violation of the United States law for shipping watered milk for sale in Massachusetts, the information on these cases being submitted direct to the United States Attorney by this Department. C. W. Leach of East Burke, Vt., and H. P. Graves of Lyndonville, Vt., were convicted for violation of the United States law, information on these cases being filed with the United States Department of Agriculture by this Department. Abraham Azoff of Malden, Max Silver of Worcester, Moses Stone of Lynn, Harry Fowler of Everett, Charles O. Swanson of Fitchburg, Marks Fefferbloom and Peter Deftos of Brockton, Michael Dakos, Harry Calivas, Stephen Pantapas and Peter Galanoplos of Peabody, Herman Nemsa of Adams and Alexander Kotarski of Salem were convicted for violation of the food laws. Albert L. Gardner and Wm. H. Dyer of Leominster, Charles M. Billings and the Direct Importing Company of Salem, and the W. B. Hunt Company and the Cunningham Drug Company of Cambridge were convicted for violation of the drug laws. Lemuel T. Brown of Cheshire was convicted for violation of the slaughtering laws. Armour & Co. and Wilson & Co. of Chicago, Samuel Krantzman of Boston, on two counts, George D. Collins, Michael Dakos, George Doucis, Manoog Kerimjiant, Henry Nikelakes, Stergios Papaiotas, Christopher Pernokas, Emanuel J. Sophos and James Spiliotis of Peabody, on two counts, Joseph Lapresti of Chelsea, on two counts, Louis Waisberg of Peabody, Biagio Domeniccucci, Morris Grossman and Amedio Vinti of Brockton, Fore River Co-operative Association of Quincy and James Stacham of Medford were convicted for violation of the cold-storage laws.

There were 13 confiscations made, consisting of 25 pounds of decomposed chickens, 388 pounds of decomposed poultry, 115 pounds of decomposed sardine herring, 85 pounds of decomposed venison, 12 pounds of decomposed fowl, 1,750 pounds of decomposed beef, 30 pounds of contaminated beef tripe, 5½ pounds of decomposed pork shoulder, 8 pounds of decomposed spare ribs, 44 pounds of decomposed lamb, and 2 immature calves, weighing 63 pounds.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

Five samples of milk containing added water, produced by Antonio Belmont of Haverhill; 7 samples of milk containing added water, produced by Joseph Bottazzi of Leominster; 1 sample of lemon extract containing no lemon oil, put up by Bell Brothers Specialty Company of Boston; and 1 sample of honey which was entirely cane sugar syrup, put up by Messrs. Calivas, Pantapas and Galanoplos of Peabody.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of December, 1917: 120,063 dozens of case eggs, 187,164 pounds of broken-out eggs, 538,108 pounds of butter, 1,543,737 pounds of poultry, 7,586 pounds of game, 8,421,135 pounds of fresh meat and fresh meat products, and 1,716,435 pounds of fresh food fish, making a total of 12,534,228 pounds.

There was on hand in storage on Jan. 1, 1918, 5,212,755 dozens of case eggs, 554,689 pounds of broken-out eggs, and 11,402,807 pounds of butter, making a total of 17,170,251 pounds.

## Quarterly Report on Slaughtering.

The inspectors of slaughtering report for October, November and December, 1917, 56,730 carcasses inspected, of which 9,991 were cattle, 16,699 were calves, 29,245 were hogs, 788 were sheep and 7 were goats. The number of confiscations was 621, of which 176 were cattle, 342 were calves, 99 were hogs and 4 were sheep.

These figures indicate a decrease of slaughtering to an extent of 16.5 per cent. when compared with figures for a similar period in 1916. This decrease is largely in hogs (25 per cent.) and to a less extent in calves (13 per cent.). It is possible that the new law of 1917, permitting slaughtering without inspection if the carcass is not to be sold, is responsible for the apparent decrease in slaughtered hogs.

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF JANUARY, 1918.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of January, 1918: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, | 1,993 | 115 | 1,249 | 188 | 441 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, | 301 | 61 | 240 | |
| *Typhoid fever (Widal test), | 74 | 24 | 45 | 5 |
| Typhoid fever (culture test), | 17 | 2 | 15 | |
| Malaria, | 5 | | 5 | |
| Gonorrhea, | 99 | 31 | 68 | |
| Miscellaneous, | 57 | | | |

Total number of examinations made, 2,546.

## RÉSUMÉ OF COMMUNICABLE DISEASES IN JANUARY, 1918.

### General Prevalence.

There were 9,376 cases of communicable diseases reported in January, an increase of 1,802 cases over the total of 7,574 reported the previous month. It also represents an increase of 2,927 cases of the number reported in January, 1917.

The increase in cases as compared with the total for the preceding month was confined to lobar pneumonia, measles, German measles, whooping cough and mumps.

Diphtheria, typhoid fever and scarlet fever showed a decrease when compared with December figures.

*Anthrax.* — The single case of anthrax reported occurred in a hide handler in a leather factory in Woburn.

*Measles.* — This disease is epidemic in the southern part of the Connecticut valley, where Holyoke, Westfield, Northampton, Springfield and Chicopee have felt its effects.

*Smallpox.* — There were 3 cases of smallpox in unvaccinated persons reported during the month in comparison with 10 cases in December.

One of the cases received its infection outside of the State, probably in Ohio, the origin of the second case is unknown, and the third patient was a person in contact with the second case.

*Typhoid Fever.* — There were 54 cases of typhoid fever in January, the lowest number for that month since the disease was made reportable.

Of this total, 51 cases were sporadic, or persons receiving their infection from sporadic cases.

It is shown that approximately one-third of all typhoid cases are due to contact infection. Many of these cases would be avoided if local boards of health would advise, and if physicians would administer, the typhoid prophylactic to the remaining members of a household.

For example, during the past year many families in this State have had two, three, four, five and, in one instance, six cases of typhoid fever in the same family, stretched over a period of months. Inoculation of the other members of the family with typhoid vaccine by the attending physician when called to the first case would have prevented these secondary cases and resulting death.

"Triple vaccine" to protect against typhoid and paratyphoid fevers is now furnished by the State Department of Health, and its use is advised rather than the vaccine made of typhoid bacilli alone.

*Diseases on the Premises of Milk Handlers.* — During the month 1 case of scarlet fever and 3 cases of diphtheria were reported on the premises of milk handlers.

## OUTBREAKS AND EPIDEMICS.

*Trichinosis.* — In Northampton occurred an outbreak of 8 cases of trichinosis among the members of one family.

Investigation showed that shortly before Christmas six hogs were killed and inspected according to the State law. Two hogs were sold and as far as could be ascertained no ill effects followed.

The meat from the remaining hogs was made into sausage by the family, which ate a portion of it uncooked. The local board of health took prompt action, confiscated the sausage meat, and prevented its sale. There were no further cases.

*Typhoid Fever in North Brookfield.* — There were 13 cases of typhoid fever reported from North Brookfield in December and 5 cases in January.

All but one of the cases occurred among the employees of a rubber mill in which town water was used for drinking purposes, and an independent supply, obtained from a cistern several hundred feet away, was used for manufacturing purposes.

There were two connections between the factory supply and the town water pipes, but when these were inspected, several weeks after the original infection, and the water tested, no evidence was found of any mingling of the two waters. The independent supply from the cistern was found to be dangerously polluted by domestic drainage discharging into it.

The eighteenth patient was the daughter of a man, also employed in the rubber mill, who died from suspected typhoid fever two weeks before the onset of his daughter's illness.

## Rare Diseases.

*Actinomycosis* was reported from Attleboro (1).

*Anterior poliomyelitis* was reported from Lowell (4) and Taunton (1).

*Anthrax* was reported from Winchester (1).

*Dog bite* was reported from Lowell (1), Taunton (2) and Waltham (1).

*Epidemic cerebrospinal meningitis* was reported from Boston (3), Camp Devens (1), Chicopee (1), Fitchburg (1), Lawrence (1), Lowell (1), Ludlow (1), Marlborough (1), Medford (2), New Bedford (1), Pittsfield (1), Revere (1), Swampscott (1), Wellesley (1) and Worcester (4).

*Septic sore throat* was reported from Attleboro (1), Beverly (1), Boston (2), Cambridge (1), Fall River (4), Mansfield (3), Melrose (1), Middleborough (1), Palmer (1) and Winthrop (1).

*Smallpox* was reported from Boston (2) and Natick (1).

*Tetanus* was reported from Worcester (1).

*Trachoma* was reported from Boston (5), Chelsea (1), Fitchburg (1), Gloucester (1) and Lowell (1).

*Trichinosis* was reported from Hingham (1) and Northampton (8).

## DISTRIBUTION.

### *All Communicable Diseases.*

| | December, 1917. | January, 1918. | January, 1917. |
|---|---|---|---|
| Total cases, | 7,574[1] | 9,376 | 6,449 |
| Case rate per 100,000 population, | 196.8[1] | 239.5 | 167.1 |

### *Certain Prevalent Diseases.*

| | December, 1917. | January, 1918. | January, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[2] |
|---|---|---|---|---|
| Diphtheria: — | | | | |
| Total cases, | 1,156[1] | 950 | 869 | Boston, (236) 379<br>Everett, (10) 28<br>Newton, (4) 20<br>Gardner, (2) 23<br>Springfield, (18) 52 |
| Case rate per 100,000 population, | 30.0 | 24.2 | 22.6 | |
| Measles: — | | | | |
| Total cases, | 1,920 | 2,950 | 1,886 | New Bedford, (41) 99<br>Boston, (367) 509<br>Braintree, (1) 146<br>Brookline, (11) 50<br>Cambridge, (49) 104<br>Medfield, (0) 70<br>Stoughton, (0) 14<br>Beverly, (1) 57<br>Chelsea, (9) 51<br>Winthrop, (8) 23<br>Somerville, (46) 157<br>Winchester, (1) 37<br>Hopkinton, (1) 14<br>Marlborough, (2) 291<br>Needham, (4) 61<br>Southborough, (0) 20<br>Wellesley, (3) 30<br>Blandford, (0) 18<br>Chesterfield, (0) 13<br>Holyoke, (12) 117 |
| Case rate per 100,000 population, | 49.9 | 75.2 | 49.0 | |
| Scarlet fever: — | | | | |
| Total cases, | 671[1] | 609 | 673 | |
| Case rate per 100,000 population, | 17.4[1] | 15.6 | 17.5 | |
| Typhoid fever: — | | | | |
| Total cases, | 98[1] | 54 | 68 | North Brookfield, (0) 5 |
| Case rate per 100,000 population, | 2.6 | 1.4 | 1.8 | |
| Whooping cough: — | | | | |
| Total cases, | 594 | 865 | 277 | Falmouth, (1) 22<br>Brockton, (11) 74<br>Brookline, (0) 54<br>Canton, (0) 25<br>Lynn, (9) 44<br>Webster, (0) 21 |
| Case rate per 100,000 population, | 15.4 | 22.1 | 7.2 | |
| Tuberculosis, pulmonary: — | | | | |
| Total cases, | 607[1] | 649 | 711 | |
| Case rate per 100,000 population, | 15.8[1] | 16.6 | 18.5 | |
| Tuberculosis, other forms: — | | | | |
| Total cases, | 60[1] | 70 | 62 | |
| Case rate per 100,000 population, | 1.6 | 1.8 | 1.6 | |

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[1] The diagnosis in certain cases has been revoked since the December Bulletin was issued.

[2] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

## INTERSTATE RECIPROCAL NOTIFICATION IN JANUARY.

| Disease and Locality of Notification. | Health Authority referred to. | Why referred. |
|---|---|---|
| Smallpox. Natick, | State Board of Health, Columbus, Ohio. | Patient came from Elyria, Ohio, January 9. Onset of disease January 12. |
| Tuberculosis. Westfield, | State Department of Health, Harrisburg, Penn. | Patient came to Westfield three weeks previous from Pennsylvania, where he had been a dispensary patient at Mt. Alton State Sanatorium for two years. |
| Tuberculosis. Camp Devens, | State Department of Health, Hartford, Conn. | Discharged. Home addresses were: Bridgeport (5), Waterbury (4), Hartford (1), Branford (1), New Haven (1), New London (1), Guilford (1) and Milford, Conn. (1). |
| Tuberculosis. Camp Devens, | State Department of Health, Albany, N. Y. | Discharged. Home addresses were: Brooklyn (1), Plattsburg (1), Hoosick Falls (2), Herkimer (1) and Albany, N. Y. (1). |
| Tuberculosis. Camp Devens, | State Board of Health, Providence, R. I. | Discharged. Home addresses were: Providence (2), Thornton (1), Newport (1), Centerdale (1) and Bradford, R. I. (1). |
| Tuberculosis. Camp Devens, | State Department of Health, Augusta, Me. | Discharged. Home address was Ellsworth, Me. |
| Tuberculosis. Camp Devens, | State Board of Health, Columbus, Ohio. | Discharged. Home addresses were Columbus, Ohio (2). |
| Tuberculosis. Camp Devens, | State Board of Health, Sacramento, Cal. | Discharged. Home address was Fort McDowd, Cal. |
| Tuberculosis. Camp Devens, | State Board of Health, Trenton, N. J. | Discharged. Home address was Fort Hancock, N. J. |
| Tuberculosis. Camp Devens, | State Department of Health, Springfield, Ill. | Discharged. Home address was Chicago, Ill. |
| Tuberculosis. Camp Devens, | State Board of Health, Jefferson City, Miss. | Discharged. Home address was Jefferson Banks, Miss. |
| Tuberculosis. Camp Devens, | State Board of Health, Austin, Tex. | Discharged. Home address was Waco, Tex. |
| Tuberculosis. Camp Devens, | State Board of Health, Richmond, Va. | Discharged. Home address was Portsmouth, Va. |
| Tuberculosis. Camp Devens, | State Department of Health, Charleston, W. Va. | Discharged. Home address was Parkersburg, W. Va. |
| Tuberculosis. Camp Devens, | State Board of Health, Burlington, Vt. | Discharged. Home addresses were: Fort Ethan Allen (1), Shoreham (1), Pownel Center (1), Newport (1) and South Royalton, Vt. (1). |

## OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES.

| Disease. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Anthrax, | Hide trimmer, | Winchester, | M | 47 | W |
| Dermatitis, | Chemical mixer, | Woburn, | M | 28 | W |
| Eczema, | Tanner, | Lowell, | M | – | – |
| Naphtha poisoning, | Shoemaker, | Lynn, | F | 21 | W |
| Lead, | Painter, | Reading, | M | – | W |
| Lead, | Lead grinder, | Woburn, | M | 45 | W |

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1917. | 63A Anterior Poliomyelitis. | | 19A Chicken Pox. | | 9 Diphtheria. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, | 3,849,006 | 4 | 2 | 1028 | 2 | 1156 | 91 | 251 | – | 460 | 230 | 1920 | 40 |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, | 778,500 | – | – | 203 | – | 463 | 32 | 28 | – | 134 | 78 | 338 | 14 |
| 4 | Cities, 150,000–200,000. | | | | | | | | | | | | | |
| 5 | Worcester, | 170,077 | – | – | 27 | – | 30 | 2 | 14 | – | 30 | 21 | 32 | 1 |
| 6 | Cities, 100,000–150,000. | *570,968* | *2* | *2* | *143* | *2* | *149* | *16* | *33* | – | *72* | *44* | *164* | *4* |
| 7 | Fall River, | 127,218 | 1 | – | 28 | – | 16 | 5 | 2 | – | 18 | 6 | 1 | – |
| 8 | New Bedford, | 115,272 | – | – | 29 | – | 13 | 2 | 1 | – | 23 | 10 | 59 | 2 |
| 9 | Cambridge, | 110,582 | – | – | 44 | 1 | 38 | 3 | 14 | – | 14 | 10 | 60 | 2 |
| 10 | Springfield, | 109,174 | 1 | 2 | 34 | – | 37 | 4 | 6 | – | 16 | 10 | 31 | – |
| 11 | Lowell, | 108,722 | – | – | 8 | 1 | 45 | 2 | 10 | – | 1 | 8 | 13 | – |
| 12 | Cities, 50,000–100,000. | *511,498* | *2* | – | *62* | – | *137* | *14* | *7* | – | *67* | *55* | *268* | *3* |
| 13 | Lynn, | 98,659 | – | – | 11 | – | 15 | 2 | 1 | – | 14 | 11 | 2 | – |
| 14 | Lawrence, | 92,187 | – | – | 4 | – | 20 | – | – | – | 3 | 4 | 3 | – |
| 15 | Somerville, | 91,102 | – | – | 18 | – | 28 | 3 | 2 | – | 11 | 6 | 98 | 1 |
| 16 | Brockton, | 64,668 | 2 | – | 14 | – | 23 | 1 | 1 | – | 5 | 3 | 7 | – |
| 17 | Holyoke, | 62,179 | – | – | 3 | – | 13 | 4 | 2 | – | 9 | 3 | 135 | 2 |
| 18 | Haverhill, | 51,806 | – | – | 8 | – | 26 | 2 | – | – | 21 | 7 | 13 | – |
| 19 | Malden, | 50,897 | – | – | 4 | – | 12 | 2 | 1 | – | 4 | 1 | 10 | – |
| 20 | Cities and Towns, 25,000–50,000. | *498,330* | – | – | *165* | – | *112* | *7* | *58* | – | *82* | *58* | *329* | *6* |
| 21 | Chelsea, | 48,273 | – | – | 5 | – | 22 | – | – | – | 23 | 9 | 59 | – |
| 22 | Newton, | 44,573 | – | – | 7 | – | 18 | 2 | 14 | – | 10 | 6 | 11 | – |
| 23 | Quincy, | 44,221 | – | – | 12 | – | 12 | – | 1 | – | 5 | 3 | 4 | – |
| 24 | Pittsfield, | 42,913 | – | – | 9 | – | 2 | 1 | 19 | – | 9 | 8 | 13 | 1 |
| 25 | Fitchburg, | 40,464 | – | – | 2 | – | 11 | 2 | – | – | 9 | 2 | 4 | – |
| 26 | Salem, | 39,872 | – | – | 9 | – | 2 | – | 15 | – | 5 | 3 | 91 | 1 |
| 27 | Everett, | 39,588 | – | – | 10 | – | 12 | 1 | 1 | – | 8 | 3 | 81 | 2 |
| 28 | Taunton, | 37,001 | – | – | 4 | – | 1 | – | 1 | – | 1 | 6 | – | – |
| 29 | Brookline, | 36,007 | – | – | 32 | – | 3 | – | 4 | – | 3 | 7 | 21 | – |
| 30 | Medford, | 33,758 | – | – | 38 | – | 3 | 1 | 1 | – | 3 | 3 | 11 | – |
| 31 | Chicopee, | 32,230 | – | – | 7 | – | 4 | – | 2 | – | 4 | 4 | 31 | 1 |
| 32 | Waltham, | 31,179 | – | – | 30 | – | 7 | – | – | – | 2 | 3 | 3 | – |
| 33 | Revere, | 28,251 | – | – | – | – | 15 | – | – | – | – | 1 | – | 1 |
| 34 | Cities and Towns, 10,000–25,000. | *569,407* | – | – | *230* | – | *110* | *8* | *41* | – | *36* | *29* | *325* | *9* |
| 35 | Beverly, | 24,863 | – | – | 5 | – | – | – | 1 | – | 4 | 1 | 13 | – |
| 36 | Gloucester, | 24,513 | – | – | 3 | – | 4 | 1 | – | – | 2 | 1 | – | – |
| 37 | Northampton, | 22,636 | – | – | 17 | – | 4 | 1 | – | – | – | – | 7 | – |
| 38 | North Adams, | 22,042 | – | – | 13 | – | 2 | – | – | – | – | – | – | – |
| 39 | Peabody, | 19,908 | – | – | – | – | 1 | – | – | – | – | 2 | 1 | – |
| 40 | Attleboro, | 19,480 | – | – | 44 | – | 12 | 2 | 20 | – | – | – | 6 | – |
| 41 | Westfield, | 19,456 | – | – | 1 | – | 7 | – | – | – | 3 | 2 | 174 | 8 |
| 42 | Watertown, | 18,123 | – | – | 4 | – | 7 | – | 1 | – | 2 | – | 4 | – |
| 43 | Leominster, | 17,675 | – | – | 1 | – | 1 | – | – | – | 4 | – | 2 | – |
| 44 | Melrose, | 17,394 | – | – | 31 | – | 8 | – | 2 | – | 2 | 1 | 1 | – |
| 45 | Framingham, | 17,146 | – | – | 4 | – | – | – | 5 | – | 1 | 1 | 4 | – |
| 46 | Gardner, | 17,116 | – | – | 14 | – | 14 | 1 | – | – | 1 | – | – | – |
| 47 | Woburn, | 16,896 | – | – | 3 | – | 2 | – | – | – | – | 1 | 1 | – |
| 48 | Arlington, | 16,524 | – | – | – | – | 2 | – | – | – | – | 1 | 49 | 1 |
| 49 | Marlborough, | 15,546 | – | – | – | – | 6 | – | – | – | – | 2 | 1 | – |
| 50 | Newburyport, | 15,470 | – | – | 32 | – | – | – | – | – | 1 | 4 | – | – |
| 51 | Methuen, | 15,137 | – | – | 2 | – | – | – | – | – | – | – | – | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH,[1] DECEMBER, 1917.

| 19C Mumps. | | 38A Ophthalmia Neonatorum. | | 7 Scarlet Fever. | | 28-29 Tuberculosis, Pulmonary. | | 30-35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 8 Whooping Cough. | | 61A Cerebrospinal Meningitis. | | 100 Septic Sore Throat. | | 5 Smallpox. | | 75A Trachoma. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| 465 | 2 | 195 | – | 671 | 16 | 607 | 375 | 60 | 55 | 98 | 9 | 594 | 10 | 15 | 13 | 17 | 7 | 10 | – | 8 | – | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 87 | – | 47 | – | 136 | 4 | 205 | 98 | 20 | 10 | 8 | 1 | 203 | 4 | 2 | 3 | 2 | 1 | 3 | – | 3 | – | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 3 | – | 16 | – | 33 | 2 | 32 | 17 | 3 | 6 | 10 | 1 | – | – | – | 4 | 3 | – | 1 | – | 2 | – | 5 |
| *52* | – | *46* | – | *85* | *3* | *126* | *65* | *12* | *9* | *36* | *3* | *81* | *4* | *3* | *2* | *4* | *1* | *2* | – | – | – | 6 |
| 29 | – | 13 | – | 10 | – | 29 | 13 | 2 | 1 | 25 | 1 | 45 | 3 | – | – | 1 | – | – | – | – | – | 7 |
| 3 | – | 11 | – | 9 | – | 37 | 11 | 5 | 4 | 7 | 1 | 15 | – | – | 1 | 1 | – | – | – | – | – | 8 |
| 10 | – | 11 | – | 16 | – | 21 | 22 | 2 | – | – | – | 11 | – | 1 | – | 1 | 1 | – | – | – | – | 9 |
| 10 | – | 9 | – | 42 | 3 | 16 | 11 | 1 | – | 4 | – | 8 | – | – | – | 1 | – | 1 | – | – | – | 10 |
| – | – | 2 | – | 8 | – | 23 | 8 | 2 | 4 | – | 1 | 2 | 1 | 2 | 1 | – | – | 1 | – | – | – | 11 |
| *63* | – | *57* | – | *101* | *1* | *67* | *40* | *7* | *7* | *10* | *2* | *91* | – | *3* | *1* | *2* | *2* | *1* | – | *2* | – | 12 |
| – | – | 33 | – | 17 | – | 6 | 8 | 2 | 2 | 2 | – | 13 | – | – | – | – | – | – | – | – | – | 13 |
| 1 | – | – | – | 4 | – | 18 | 9 | 1 | 1 | 4 | 1 | 3 | – | 1 | 1 | – | – | – | – | – | – | 14 |
| 2 | – | 7 | – | 33 | – | 12 | 10 | 1 | 1 | 3 | 1 | 2 | – | – | – | 1 | 1 | – | – | – | – | 15 |
| 27 | – | 10 | – | 15 | – | 6 | 1 | – | – | – | – | 63 | – | 1 | – | – | – | – | – | – | – | 16 |
| 2 | – | – | – | 21 | – | 10 | 4 | – | 1 | – | – | 10 | – | – | – | – | – | – | – | 1 | – | 17 |
| 30 | – | 3 | – | 6 | – | 11 | 3 | 2 | 1 | 1 | – | – | – | – | – | 1 | – | – | – | 1 | – | 18 |
| 1 | – | 4 | – | 5 | 1 | 4 | 5 | 1 | 1 | – | – | – | – | 1 | – | – | 1 | 1 | – | – | – | 19 |
| *69* | – | *14* | – | *97* | *3* | *62* | *40* | *7* | *5* | *4* | *1* | *70* | – | *1* | *2* | *1* | – | *1* | – | – | – | 20 |
| – | – | 6 | – | 5 | – | 11 | 6 | 1 | 1 | – | – | 5 | – | – | – | – | – | – | – | – | – | 21 |
| 49 | – | – | – | 3 | – | 1 | 2 | – | – | 1 | – | 11 | – | – | – | 1 | – | – | – | – | – | 22 |
| 1 | – | 1 | – | – | – | 10 | 2 | 2 | – | 1 | 1 | – | – | – | – | – | – | – | – | – | – | 23 |
| 3 | – | 1 | – | 25 | 2 | 7 | 8 | – | 1 | – | – | 10 | – | – | 1 | – | – | – | – | – | – | 24 |
| 2 | – | – | – | 5 | – | 10 | 3 | – | 1 | – | – | 28 | – | – | – | – | – | – | – | – | – | 25 |
| 5 | – | – | – | 2 | – | 2 | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 26 |
| 1 | – | 2 | – | 14 | – | 3 | 1 | 3 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 27 |
| 3 | – | – | – | 13 | – | 3 | 5 | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | 28 |
| 1 | – | – | – | 10 | 1 | 1 | 3 | – | – | – | – | 14 | – | – | – | – | – | 1 | – | – | – | 29 |
| – | – | 2 | – | 7 | – | 3 | 2 | 1 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | 30 |
| – | – | 1 | – | 3 | – | 6 | 2 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 31 |
| 4 | – | 1 | – | 1 | – | 1 | 4 | – | 1 | 1 | – | – | – | 1 | 1 | – | – | – | – | – | – | 32 |
| – | – | – | – | 9 | – | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 33 |
| *162* | *2* | *8* | – | *101* | *2* | *59* | *37* | *6* | *8* | *10* | *1* | *93* | *1* | *3* | *1* | *5* | *3* | *2* | – | *1* | – | 34 |
| – | – | – | – | 5 | – | 4 | – | 1 | – | – | – | 1 | – | 1 | – | – | – | 2 | – | – | – | 35 |
| – | – | 1 | – | 1 | – | – | 1 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 36 |
| 1 | – | – | – | 7 | – | 7 | 5 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 37 |
| 7 | – | – | – | – | – | 3 | 3 | – | – | 1 | – | 33 | – | – | – | – | – | – | – | – | – | 38 |
| 2 | – | – | – | – | – | 1 | – | – | – | 1 | – | 1 | – | – | – | – | – | – | – | – | – | 39 |
| – | – | – | – | 5 | – | – | 1 | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | 40 |
| – | – | – | – | 14 | 1 | 2 | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 41 |
| – | – | – | – | 1 | – | 2 | – | – | – | 1 | – | 4 | – | – | – | – | – | – | – | – | – | 42 |
| – | – | 1 | – | 3 | – | 3 | 1 | 1 | – | – | – | 3 | – | – | – | 2 | – | – | – | – | – | 43 |
| – | – | 2 | – | 2 | – | 2 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 44 |
| – | – | – | – | 7 | – | 3 | 3 | – | – | – | – | – | – | – | – | 2 | – | – | – | – | – | 45 |
| – | – | – | – | 11 | – | 2 | – | – | – | – | – | 5 | – | – | – | – | – | – | – | – | – | 46 |
| – | – | – | – | 10 | – | 1 | – | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | 47 |
| 1 | – | – | – | 4 | – | 3 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | 48 |
| – | – | 1 | – | – | – | 3 | 2 | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 49 |
| 2 | – | 1 | – | – | – | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 50 |
| – | – | – | – | – | – | 1 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 51 |

of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them for

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | CITIES AND TOWNS GROUPED IN ORDER OF POPULATION. | Population estimated as of July 1, 1917. | 63A Anterior Poliomyelitis. | | 19A Chicken Pox. | | 9 Diphtheria. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 14,930 | – | – | – | – | 2 | 1 | – | – | – | – | – | – |
| 53 | Weymouth, | 14,444 | – | – | – | – | 3 | – | – | – | – | – | – | – |
| 54 | Milford, | 13,962 | – | – | 1 | – | 2 | – | – | – | – | 2 | 10 | – |
| 55 | Winthrop, | 13,918 | – | – | 7 | – | 1 | – | 4 | – | 4 | – | 17 | – |
| 56 | Greenfield, | 13,590 | – | – | 24 | – | 2 | – | – | – | 1 | – | – | – |
| 57 | Wakefield, | 13,389 | – | – | – | – | 2 | – | – | – | – | 1 | 5 | – |
| 58 | Adams, | 13,302 | – | – | 1 | – | 3 | 1 | – | – | 2 | – | – | – |
| 59 | Plymouth, | 13,272 | – | – | 2 | – | 5 | 1 | 7 | – | – | – | 12 | – |
| 60 | Clinton, | 13,243 | – | – | 1 | – | – | – | – | – | 1 | – | 1 | – |
| 61 | Webster, | 13,031 | – | – | – | – | – | – | – | – | – | 1 | – | – |
| 62 | Norwood, | 12,286 | – | – | 3 | – | – | – | – | – | – | – | – | – |
| 63 | West Springfield, | 12,273 | – | – | – | – | 7 | – | – | – | – | – | 1 | – |
| 64 | Danvers, | 11,955 | – | – | 6 | – | – | – | – | – | 5 | 3 | 1 | – |
| 65 | Dedham, | 11,820 | – | – | 3 | – | 1 | – | – | – | 1 | – | 1 | – |
| 66 | Natick, | 11,673 | – | – | 2 | – | 3 | – | – | – | 1 | – | 2 | – |
| 67 | Saugus, | 11,189 | – | – | – | – | 5 | – | – | – | – | 1 | – | – |
| 68 | Easthampton, | 10,430 | – | – | – | – | 2 | – | – | – | – | 2 | – | – |
| 69 | Athol, | 10,330 | – | – | – | – | 2 | – | – | – | – | 1 | – | – |
| 70 | Winchester, | 10,312 | – | – | 6 | – | – | – | 1 | – | – | 1 | 12 | – |
| 71 | Bridgewater, | 10,129 | – | – | – | – | – | – | – | – | 1 | 1 | – | – |
| 72 | TOWNS, 5,000–10,000. | *355,823* | – | – | *88* | – | *78* | *5* | *21* | – | *26* | *32* | *230* | *3* |
| 73 | TOWNS, 2,500–5,000. | *181,232* | – | – | *25* | – | *43* | *1* | *2* | – | *6* | *11* | *44* | – |
| 74 | TOWNS UNDER 2,500. | *213,171* | – | – | *83* | – | *31* | *6* | *11* | – | *5* | *21* | *77* | – |
| 75 | STATE INFIRMARY, | | – | – | *2* | – | *2* | – | – | – | *1* | *1* | – | – |
| 76 | Camp Devens, | | – | – | – | – | *1* | – | *36* | – | *1* | – | *113* | – |

In addition to the above there occurred 4 cases of anthrax, 1 in Boston, 1 in Stoneham and 2 in Woburn,
tery in Boston and 4 deaths, 3 in Boston and 1 in Newburyport; 2 cases of malaria, 1 in Boston and 1 in
and 2 in Malden; and 2 cases of tetanus, 1 in Peabody and 1 in Pittsfield, with 1 death in Peabody and 1 in

## TO THE PUBLIC HEALTH, ETC. — *Concluded.*

| 19C<br>Mumps. | | 38A<br>Ophthalmia Neonatorum. | | 7<br>Scarlet Fever. | | 28-29<br>Tuberculosis, Pulmonary. | | 30-35<br>Tuberculosis, Other Forms. | | 1<br>Typhoid Fever. | | 8<br>Whooping Cough. | | 61A<br>Cerebrospinal Meningitis. | | 100<br>Septic Sore Throat. | | 5<br>Smallpox. | | 75A<br>Trachoma. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| - | - | - | - | - | - | 1 | 3 | 1 | 1 | - | - | - | - | - | - | - | 2 | - | - | - | - | 52 |
| - | - | - | - | - | - | 1 | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 53 |
| - | - | - | - | 6 | - | - | 1 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | - | 54 |
| 1 | - | - | - | 3 | - | 1 | 2 | - | - | - | - | - | - | 1 | 1 | - | - | - | - | - | - | 55 |
| 104 | - | 1 | - | 2 | - | - | 1 | - | - | - | - | 4 | - | 1 | - | - | - | - | - | - | - | 56 |
| - | - | - | - | 1 | - | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 57 |
| 2 | 2 | - | - | - | - | 1 | - | - | - | 3 | - | - | - | - | - | - | - | - | - | - | - | 58 |
| - | - | 1 | - | 1 | 1 | 1 | 2 | - | - | - | - | 4 | - | - | - | 1 | - | - | - | - | - | 59 |
| 18 | - | - | - | 1 | - | 2 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 60 |
| - | - | - | - | - | - | - | - | - | - | - | - | 9 | 1 | - | - | - | - | - | - | - | - | 61 |
| - | - | - | - | 8 | - | 1 | - | - | - | - | - | 15 | - | - | - | - | - | - | - | - | - | 62 |
| - | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 63 |
| 17 | - | - | - | 2 | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 64 |
| 5 | - | - | - | - | - | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 65 |
| - | - | - | - | 1 | - | 5 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 66 |
| - | - | - | - | 2 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | 67 |
| 1 | - | - | - | 1 | - | - | - | - | - | - | - | 10 | - | - | - | - | - | - | - | - | - | 68 |
| 1 | - | - | - | 1 | - | 1 | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 69 |
| - | - | - | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - | - | - | - | - | - | - | - | - | 70 |
| - | - | - | - | - | - | 2 | 3 | 1 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | 71 |
| *24* | - | *5* | - | *60* | *1* | *28* | *24* | *1* | *6* | *2* | - | *40* | *1* | *1* | - | - | - | - | - | - | - | 72 |
| *2* | - | - | - | *28* | - | *11* | *15* | *1* | *4* | *15* | - | *5* | - | - | - | - | - | - | - | - | - | 73 |
| *3* | - | *2* | - | *30* | - | *9* | *25* | *1* | - | *3* | - | *11* | - | - | - | - | - | - | - | - | - | 74 |
| - | - | - | - | - | - | *7* | *14* | *2* | - | - | - | - | - | *1* | - | - | - | - | - | - | - | 75 |
| - | - | - | - | - | - | *1* | - | - | - | - | - | - | - | *1* | - | - | - | - | - | - | - | 76 |

with 1 death in Boston; 3 cases of dog bite, 1 in Brockton, 1 in Lawrence and 1 in Worcester; 1 case of dysen-
Marblehead; 3 cases of pellagra, 1 in Fall River, 1 in Malden and 1 in Middleton, with 4 deaths, 2 in Lowell
Pittsfield.

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner, Allan J. McLaughlin, M.D.

| | |
|---|---|
| Division of Administration, . . . | Acting Director, Lyman A. Jones, M.D. |
| Division of Sanitary Engineering, . . | Director and Chief Engineer, X. H. Goodnough, C.E. |
| Division of Communicable Diseases, . . | Director, Eugene R. Kelley, M.D. |
| Division of Water and Sewage Laboratories, | Director and Chemist, H. W. Clark. |
| Division of Biologic Laboratories, . . | Director and Pathologist, Milton J. Rosenau, M.D |
| Division of Food and Drugs, . . . | Director and Analyst, Hermann C. Lythgoe. |
| Division of Hygiene, . . . . . | Director, Lyman A. Jones, M.D. |

## Public Health Council.

Allan J. McLaughlin, M.D., *Chairman.*

Wm. T. Sedgwick, Ph.D.
George C. Whipple, S.B.
David L. Edsall, M.D.
Joseph E. Lamoureux, M.D.
Wm. J. Gallivan, M.D.
John T. Wheelwright.

## State District Health Officers.

| | |
|---|---|
| The Southeastern District, . . . | Adam S. MacKnight, M.D., Fall River. |
| The Eastern District, . . . . | Merrill E. Champion, M.D., Wollaston. |
| The Northeastern District, . . . | Arthur A. Brown, M.D., Swampscott. |
| The North Midland District, . . . | Charles E. Simpson, M.D., Lowell. |
| The South Midland District, . . | William W. Walcott, M.D., Natick.[1]<br>George T. O'Donnell, M.D., Waltham.[2] |
| The Wachusett District, . . . . | Francis A. Finnegan, M.D., Ayer. |
| The Connecticut Valley District, . . | John S. Hitchcock, M.D., Northampton. |
| The Berkshire District, . . . . | Howard A. Streeter, M.D., Pittsfield. |

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[1] Leave of absence, military service.

[2] At a meeting of the Public Health Council of the State Department of Health on Oct. 30, 1917, it was voted that Dr. George T. O'Donnell be appointed as permanent State District Health Officer.

# PUBLIC HEALTH BULLETIN

ISSUED MONTHLY

BY THE

STATE DEPARTMENT OF HEALTH

OF MASSACHUSETTS

MARCH, 1918

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**Vol. 5, No. 3**

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ALLAN J. McLAUGHLIN, M.D., *Commissioner*

*The Common Health of the Commonwealth*

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Publication of this Document
approved by the
Supervisor of Administration.

# THE THIRD LIBERTY LOAN.

THE Liberty Loan Committee of New England requests the publication of the following paragraphs, since the government does not permit them "to spend money for newspaper advertising:"—

## The Great Duty.

As we go about our daily tasks in peace and safety men are dying every minute on the battlefields of Europe to save civilization. Our own gallant soldiers are shedding their blood in France and our sailors engulfed in the waters of the Atlantic as they go in defence of America's rights and honor.

Upon our performance of the work committed to us depend the lives of thousands of men and women, the fate of many nations, the preservation of civilization and humanity itself; and the more efficient and prompt we people of America are in doing our part, the more quickly will this war come to an end, and the greater the number of our soldiers and sailors who will be saved from death and suffering, and the greater number of the people of other nations released from bondage and saved from death.

To work, to save, to economize, to give financial support to the government is a duty of the nation and to the world, and it is especially a duty to our fighting men who on land and sea are offering their lives for their country and their countrymen.

## TISSUE-FORMING FOODS.

WHETHER we will or not, even while we sleep the body processes are continually going on, and there is a constant wearing out of living body tissues. In addition, in the growing body, and the body wasted by disease, there is a gradual formation of entirely new tissues. Unless these worn-out tissues are repaired and adequate provision made for growth, there will result a wasted or stunted body.

One element, namely, nitrogen, is essential for the growth and repair of living tissues. Only food containing this important constituent is able to promote this work. Nature has liberally supplied us with such food in the form of meat, fish, eggs, milk and cheese from the animal kingdom, and peas, beans, lentils, wheat and nuts from the vegetable kingdom. Though protein foods are the most costly of those which must enter into our diet, the necessary amounts must be used in order to avoid underfeeding, and in order to provide for the growth and maintenance of muscular tissue.

The amount of protein needed is influenced by age, sex and the size of the body, and must always be sufficient to replace that used by the body each day. It has been estimated that a man weighing 150 pounds, and doing active work, would generally require from 90 to 125 grams, or from 3½ to 4 ounces, of protein daily, while for a woman of average size, 70 grams, or 2½ ounces, would be sufficient.

The mistake most often made is that of eating too much rather than too little protein food. Excess protein is seldom stored up in the body in the form of muscular tissues, but after being digested is thrown off by the kidneys in form of urea and uric acid. By eating more protein food than is actually needed we not only overtax the digestive organs, but also the kidneys, and by so doing often lay the foundation of future diseases of these organs. Six usual servings of protein food will yield about 325 calories, and is more than sufficient to keep the body in good condition.

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NOTE. — In the January bulletin, page 6, second paragraph, in the article on "Food and the Calorie," the table of protein, fat and carbohydrate values should read as follows: —

Protein: 4.1 calories per gram or 1,860 calories per pound.
Fat: 9.3 calories per gram or 4,218 calories per pound.
Carbohydrate: 4.1 calories per gram or 1,860 calories per pound.

Since the protein foods vary greatly in their cost, digestibility and composition, it may be well to consider each separately.

Meat, although the most expensive source of protein, is without doubt that used most by the majority of people. It is generally preferred because of its agreeable flavor, due to the extractives which it contains. These, while possessing no real food value, stimulate the digestive juices and so aid the digestion; it is also these which produce the feeling of satisfaction which follows a meal of meat. During the process of digestion meat gives off more heat than any other food, and for that reason should be used sparingly in hot weather and in warm climates. It is, however, a wholesome food if properly used and not eaten in too large amounts. The food value of the different kinds of meat depends chiefly upon the kind and age of the animal from which it is taken. The flesh of young animals contains a larger amount of water than that of mature animals, and is less nourishing. The digestibility varies with the kind of meat, the amount of fat it contains and the toughness of the fibers; for example, pork and goose contain large amounts of fat which form a waterproof coating around the protein, making it difficult to digest. The tough meats come from the parts of the animal subjected to the greater amount of physical exercise. The fibers from these cuts are denser and harder for the digestive juices to liquify, but contain just as much food value, are less expensive, and, by proper cooking, can be made fully as tender and palatable as the most expensive cuts.

The protein of fish is similar to that of meat, and is, for the most part, cheaper and easier to digest. It is less stimulating and less heating than meat and a better food for warm weather. Shellfish, with the exception of oysters, are difficult to digest and expensive because of the large amount of waste. Oysters are easy to digest but very poor in protein, one egg containing as much nourishment as fourteen oysters.

Milk and eggs are our most interesting protein foods. Milk is the food provided by nature for young animals, and contains, in addition to a large amount of easily digested protein, all the other elements needed by the body. One quart of milk contains as much food value as three-fourths of a pound of round steak, 2 pounds of chicken or 8 eggs, and even at 14 cents per quart is an economical food. It is a necessary food for babies, is essential for the proper development of the growing child, is indispensable in the diet of invalids, and is, in fact, a good food for people of all ages. It is easy to secure, can be used without cooking and is easy to digest. Milk differs slightly from other proteins in its digestion. There is in the stomach an enzyme which acts upon milk alone and changes it into a soft curd very soon after it is swallowed; this curd is then digested like other proteins. If milk is taken too rapidly a large curd is formed which is sometimes hard to digest. For this reason it is better to drink milk slowly or to eat a cracker or a slice of bread with it.

Eggs are a comparatively expensive source of protein. Since eggs, like milk, are food furnished by nature for the development of the young, being the food of the chick within the shell, they too contain all the elements needed for growth. Carbohydrate alone is lacking, doubtless because the chick moves but little before it leaves the shell and does not need carbohydrates, which are chiefly energy-producing food. The egg is very rich in mineral, and the yolk contains a large amount of easily digested fat. Like milk, eggs are especially valuable in the diet of children and invalids, and at the same time an excellent food for persons of all ages, except, of course, infants. They are comparatively easy for most people to digest, being most quickly digested when raw or soft-cooked, but quite as completely digested when hard cooked if thoroughly masticated.

Cheese is one of our best meat substitutes. It is made from the curd or protein of milk, and contains a fairly large amount of fat. We have many varieties of cheese resulting from the kind of milk from which it is derived and the process by which it is made. One pound of cottage cheese contains most of the protein and fat from 4 quarts of milk, and more protein with twice the fuel value of 1 pound of beef, at much less cost. Some people have difficulty in digesting cheese due to the fat which surrounds the protein, making it hard for the digestive juices to reach it. This can be greatly overcome if the cheese is thoroughly masticated or served in some finely divided form, as is soufflés and scalloped dishes. Care should be exercised, however, not to cook a dish containing cheese at a high temperature, since high heat will change the cheese into a tough, indigestible mass very difficult of digestion.

Among the tissue-forming foods derived from plant sources the legumens, that is, peas, beans and lentils, rank highest, containing protein in a form greatly resembling the curd of milk. They are also rich in carbohydrates and in mineral matter, especially iron and phosphorus, but are quite lacking in fat. The protein of the legumens is harder for people of sedentary occupations to digest than that from animal sources, but is an inexpensive and valuable source of protein for those leading an active out-of-door life. The discomfort which often follows a meal of legumens is sometimes partly due to the large amount of carbohydrate they contain, which often causes intestinal fermentation, but the removal of the skins by straining, and the serving of the legumens in a finely divided form, as in soups and soufflés, has been found in many instances to overcome this difficulty. The legumens should not be soaked or cooked in hard water, since the protein in them unites chemically with the minerals in hard water in such a way that they cannot be thoroughly softened, even by long cooking. If the water which is to be used in their preparation is hard it may be softened by the addition of a little baking soda. Peas and lentils are easier to digest than beans, and many people who have great difficulty in digesting baked beans experience no ill effects after a meal of baked peas.

The grains, such as oats, wheat and corn, are often classed with the proteins, and while they contain an appreciable amount of protein they do not contain it in sufficient amounts, and should be used in combination with other protein foods. Wheat flour contains more protein than corn meal; graham flour and entire wheat flour have a higher percentage of protein than an equal weight of white flour, but the protein in the white flour is more completely absorbed by the body. Graham and entire wheat flours, however, contain a much larger amount of easily assimilated phosphorus, iron and calcium, and bread made from these flours should always be included in the diet. Such breads made or eaten with milk, or cereals served with milk, have high protein value, and can well take the place of some of the animal proteins.

Nuts are becoming more and more recognized as a valuable source of protein. They also contain a large amount of fat and are well supplied with mineral matter, but, with the exception of chestnuts, are lacking in carbohydrates. Up to the present time they have been used more or less as food accessories instead of being given their proper place in the diet, — that of a meat substitute.

Peanuts and butternuts contain the highest per cent. of protein, 10 cents worth of peanuts yielding 4 ounces of protein and 2,767 calories, — more than is needed by the average adult daily. Almonds, beech nuts and pistachio nuts come next, comparing favorably with the legumens, while Brazil nuts, filberts, walnuts and hickory nuts contain sufficient amounts to find a real place in the diet. Chestnuts are low in protein and cannot be used as a meat substitute, but are rich in carbohydrates. This carbohydrate is in the form of starch, and should be thoroughly cooked before the chestnuts are eaten. When nuts are eaten in large amounts between meals, or in addition to a hearty meal, and are not well masticated, they often cause indigestion. While it is true that nut protein is not as easily digested as animal protein, probably little or no digestive disturbances will be experienced by those who eat them in moderate amounts as the main dish of a meal. This will be especially true if they are served in some finely divided form and are thoroughly masticated. They are a concentrated food, and should be taken with more bulky foods, such as green vegetables and fruits.

The question often arises as to whether a diet containing protein from the animal kingdom is better than one containing protein from the vegetable kingdom, or, in other words, whether a vegetarian diet is the superior. This question can best be answered when the chemical composition of protein is fully understood. Protein is made up from a union of seventeen chemical substances containing nitrogen, called amino acids. Each one of the seventeen has its own particular duty to perform and is absolutely essential for the proper growth and repair of all the body tissues. Food containing all of them must be represented in the diet. The protein foods from animal sources contain all these substances in varying proportions suitable for body growth, but the protein foods from the vegetable kingdom are lacking in some of these acids, or, if all are present, they are in such small proportions as to be inadequate for normal development. If, however, the vegetable proteins are combined with milk and eggs from the animal kingdom the diet will be a safe one.

The animal proteins are, for the most part, easier to digest than the vegetable proteins. Since they are more concentrated a smaller amount is necessary, and their pleasant flavor makes them a general favorite. The proteins from the vegetable kingdom are less expensive, and if properly prepared can be made into palatable and digestive dishes. A wise selection of protein foods would then comprise those from both vegetable and animal sources, including always as liberal a supply of milk and eggs as is possible. In this way the diet can be made more varied, and greater economy can be practiced without danger to the health of the individual.

## BIRTH AND DEATH CERTIFICATES SUPPLIED BY THE SECRETARY OF STATE.

Because of the frequent requests received by the State Department of Health for blank certificates for birth and death returns, and the resulting delay in sending out the supplies desired, notice is given that these supplies are furnished by the Secretary of State's office, and that all requests for such blanks should be addressed to the Secretary of State, State House, Boston.

## REPORT OF DIVISION OF FOOD AND DRUGS.

During the month of February, 1918, samples were collected in 29 cities and towns.

There were 250 samples of milk examined, of which 49 were below the legal standard, 6 samples were skimmed milk not properly labeled, and 6 samples contained added water.

There were 258 samples of food examined, of which the following were adulterated: 3 samples of condensed skimmed milk not properly labeled, 4 samples of cream containing formaldehyde, 43 samples of old eggs sold as fresh, 1 sample of fish containing added bone, 5 samples of compound lard not properly labeled, 1 sample of maple sugar containing cane sugar, 1 sample of Hamburg steak containing sulphites, 15 samples of sausage containing starch in excess of 2 per cent., 1 sample of decomposed nuts, 5 samples of olive oil containing cottonseed oil, and 3 samples of watered oysters.

There were 129 samples of drugs examined, of which 42 were adulterated. These consisted of 9 samples of camphorated oil, 32 samples of spirit of nitrous ether, and 1 sample of spirit of peppermint deficient in the active ingredient.

The Boston police department and the Watch and Ward Society submitted 31 samples of poisons for examination, and the Boston and Weymouth police departments submitted 3 samples of liquor for examination.

There were 54 convictions for violation of the laws, $600 in fines being imposed. Antonio Belmont, Iganzio Palermo and Domenico Serratore of Haverhill, on two counts, and Hyman Oleman and Jennie Schwartz of Lawrence were convicted for violation of the milk laws. Anthony Spanoodis, on two counts, the Massachusetts Mohican Company, Joseph Seefer and Louie J. Farrah, on two counts, all of Lawrence, Frederick Murgatroyd and The Great Atlantic & Pacific Tea Company of Fall River, Benjamin Sher of Malden, Robert Scott and George A. Folsom of East Boston, A. M. Cook, Max Bunke, Frederick Eifert, Commonwealth Sausage Company and Marino Scofidi of Boston, and James Van Dyk Company of Springfield were convicted for violation of the food laws. Messrs. Murgatroyd and Folsom, and The Great Atlantic & Pacific Tea Company, appealed their cases. J. Windell Vogel of Boston and Arthur F. Ryder of Lawrence were convicted for violation of the drug laws. Paul Harrison of Chelsea, on two counts, Walter M. Lougee, Albert Ruff of Boston, on two counts, Frank C. Raposa, Joseph Alemida, Frank S. Boute, Stanilis Bouthillier, Louis Letendre, Jos. S. Letendre, William List, Manuel P. Mello and Louis Regoli of Fall River, Samuel Tillman, Louis Berinstein, Lyman J. Dowd, Rood & Woodbury and Lena Sisitzky of Springfield, Max Berman of Lynn, Samuel Cohen and Samuel First of Roxbury, George Corey, Louie J. Farrah and The Massachusetts Mohican Company, on two counts, of Lawrence were convicted for violation of the cold-storage laws.

There were 6 confiscations made, consisting of 157 pounds of decomposed chickens, 315 pounds of decomposed shell eggs, 226 pounds of tuberculous beef, 300 pounds of putrid beef, 96 pounds of pork affected with hog cholera and 242 pounds of decomposed veal.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

One sample of Leadership brand Hamburg steak containing sulphites and not so labeled, put up by Chamberlain & Co. of Boston; 2 samples of sausage containing starch in excess of 2 per cent., from the Commonwealth Sausage Company of Boston; 1 sample of decomposed walnuts, from the Beacon Grocery Company of Boston.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of January, 1918: 33,960 dozens of case eggs, 192,100 pounds of broken-out eggs, 280,245 pounds of butter, 3,343,352 pounds of poultry, 1,060 pounds of game, 6,542,943 pounds of fresh meat and fresh meat products, and 2,171,379 pounds of fresh food fish, making a total of 12,565,039 pounds.

There was on hand in storage on Feb. 1, 1918, 1,218,757 dozens of case eggs, 402,032 pounds of broken-out eggs, and 6,600,650 pounds of butter, making a total of 8,221,439 pounds.

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF FEBRUARY, 1918.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of February, 1918: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, . . . . | 1,044 | 60 | 647 | 106 | 231 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, . . . . . | 258 | 54 | 204 | |
| *Typhoid fever (Widal test), . . | 106 | 12 | 94 | 6 |
| Typhoid fever (culture test), . . | 18 | 2 | 16 | |
| Malaria, . . . . . . | 5 | – | 5 | |
| Gonorrhœa, . . . . . . | 128 | 27 | 101 | |
| Miscellaneous, . . . . . | 141 | | | |

Total number of examinations made, 1,700.

## RÉSUMÉ OF COMMUNICABLE DISEASES FOR FEBRUARY, 1918.

### General Prevalence.

There were 9,950 cases of communicable diseases reported during February, an increase of 573 cases over the number of cases reported in January.

Three diseases showed an appreciable increase, measles having 521 cases, German measles 710 cases, and lobar pneumonia 185 cases in excess of the January totals for those diseases.

Certain diseases decreased in prevalence, notably diphtheria, there being 272 cases less in February than in January.

*Anthrax.* — There were 5 cases of anthrax reported during the month. Three cases were wool sorters, receiving their infection from Argentine wool, and 2 cases were laborers in beam houses, receiving their infection from anthrax-infected hides from Hankow, China.

Four of the cases were of the external type of the disease, and the remaining case was a patient who had infection of the lungs, causing a pneumonia or what is known as "wool sorters' disease."

*Epidemic Cerebrospinal Meningitis.* — There were 37 cases of this disease reported, which is double the number usually reported for February in Massachusetts.

Lumbar puncture and laboratory examination for meningococci should be made in all cases to confirm the diagnosis and to give the accepted treatment of anti-meningitis serum. Laboratory diagnosis is within reach of all physicians in the State, and the anti-meningitis serum is furnished free to physicians by the State Department of Health.

The serum is given subdurally, or, in cases of general blood infection, intravenously.

*Lobar Pneumonia.* — It is at this time of the year that this disease takes its greatest toll, and all persons should take care of their coughs and colds in order to present as strong a resistance as possible to the pneumococcus.

The course of the disease for the past ten months will be of interest to every physician. The disease was made reportable last May.

*Pneumonia.*

| | 1917. | | | | | | | | 1918. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. |
| Cases, . . . | 360 | 277 | 80 | 57 | 80 | 152 | 290 | 460 | 698 | 883 |
| Deaths,[1] . . | 340 | 173 | 81 | 60 | 101 | 172 | 242 | 330 | 423 | – |

[1] From the records of the Secretary of State.

*Measles.* — There were a few communities where measles was unduly prevalent, but in only one large area was the disease epidemic. The area adjacent to Boston on the north and extending west as far as Marlborough was the main focus of the disease in the State during February.

*Smallpox.* — Two cases of smallpox were reported, one in Lowell and one in Marlborough. The source of infection for the Lowell case was not found.

The case in Marlborough received his infection from an unrecognized case of the disease in a person from Gardiner, Me. The case from Maine worked in a local shoe shop, and undoubtedly more cases will follow. Neither of the cases had been vaccinated.

*Typhus Fever.* — What was apparently a true case of typhus exanthematici was reported from Chelsea. The symptoms of the patient were typical of the disease, and the patient died in the third week of the illness.

Investigation of the home and place of business disclosed no insects or other cases of the disease, and the source of infection was not determined.

*Diseases on the Premises of Milk Handlers.* — There were 2 cases of communicable diseases reported, one a case of scarlet fever and the other a case of diphtheria, in New Hampshire, on a farm producing milk for sale in Massachusetts. In both instances proper precautions were taken by the local boards of health, and no cases are known to have occurred from infected milk.

## OUTBREAKS AND EPIDEMICS.

*Diphtheria.* — During the month there occurred several sore throats among the nurses and patients of one of the hospitals in the State. No effort was made at first to take cultures or ascertain if the disease was diphtheria or not. At last cultures were taken of two of the severe cases, and diphtheria bacilli were found.

In Plymouth 11 cases were reported, and investigation showed 7 of the 11 cases to be in one family.

*German Measles.* — Several outbreaks were reported during the month, chiefly in institutions.

In Haverhill 30 cases were reported, of which number 17 were cases among students of Bradford Academy. The disease appeared in the academy shortly after a "prom" attended by students from the Phillips Andover Academy, where the disease was prevalent.

In Gill 73 cases were reported, all being students of Mount Hermon Academy. All of the cases were quarantined promptly in a cottage.

*Scarlet Fever.* — There occurred an outbreak of 30 cases of scarlet fever in one of the hospitals in Boston during the month. Each case was promptly removed to an isolation hospital, and the outbreak was soon under control.

Fifteen cases were reported from Holden, and investigation showed the outbreak to have started in a family where 5 cases occurred, no physician being called until the second child in the family was ill. The disease spread through the school.

An outbreak occurred in an orphanage in Fall River. There were 36 cases of the disease reported by Fall River, of which number 30 cases were in the orphanage.

## RARE DISEASES.

*Anterior poliomyelitis* was reported from Dracut, 1; Haverhill, 1; and Somerville, 1.

*Anthrax* was reported from Lowell, 2; Lawrence, 1; Salem, 1; and Woburn, 1.

*Dog bite* was reported from Attleboro, 1; Berkley, 1; Brockton, 1; and Worcester, 1.

*Dysentery* was reported from North Adams, 2.

*Epidemic cerebrospinal meningitis* was reported from Boston, 11; Cambridge, 1; Chelsea, 2; Easthampton, 1; Fall River, 2; Hanson, 1; Holbrook, 1; Leominster, 1; Lowell, 4; Medford, 1; New Bedford, 1; Pittsfield, 4; Springfield, 1; Wayland, 1; and Worcester, 4.

*Malaria* was reported from Cambridge, 1.

*Septic sore throat* was reported from Boston, 3; Brookline, 2; Chicopee, 1; Fall River, 2; Foxborough, 1; Gloucester, 1; Haverhill, 1; and Palmer, 1.

*Smallpox* was reported from Lowell, 1; and Marlborough, 1.

*Trachoma* was reported from Boston, 3; Cambridge, 1; Danvers, 1; Fall River, 1; and Springfield, 1.

*Trichinosis* was reported from Brockton, 5.

*Typhus fever* was reported from Chelsea, 1.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | January, 1918. | February, 1918. | February, 1917. |
|---|---|---|---|
| Total cases, | 9,374[1] | 9,950 | 6,412 |
| Case rate per 100,000 population, | 239.1 | 253.8 | 166.6 |

### *Certain Prevalent Diseases.*

| | January, 1918. | February, 1918. | February, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[2] |
|---|---|---|---|---|
| Diphtheria: — | | | | |
| Total cases, | 950 | 678 | 783 | Boston, (237) 288<br>Everett, (7) 18 |
| Case rate per 100,000 population, | 24.2 | 17.3 | 20.3 | |
| Measles: — | | | | |
| Total cases, | 2,950 | 3,471 | 2,197 | Bourne, (1) 11<br>Dartmouth, (3) 16<br>New Bedford, (38) 98<br>Boston, (468) 607<br>Braintree, (1) 44<br>Cambridge, (59) 210<br>Hingham, (0) 16<br>Quincy, (24) 179<br>Beverly, (7) 88<br>Chelsea, (9) 59<br>Haverhill, (23) 96<br>Belmont, (2) 24<br>Somerville, (66) 105<br>Watertown, (5) 41<br>Winchester, (1) 110<br>Ashland, (0) 35<br>Charlton, (0) 15<br>Hopkinton, (0) 45<br>Marlborough, (0) 412<br>Natick, (1) 40<br>Newton, (33) 112<br>Wellesley, (3) 72<br>Westborough, (0) 25<br>Springfield, (19) 194 |
| Case rate per 100,000 population, | 75.2 | 88.6 | 57.1 | |
| Scarlet fever: — | | | | |
| Total cases, | 609[1] | 537 | 597 | |
| Case rate per 100,000 population, | 15.6 | 13.7 | 15.5 | |
| Typhoid fever: — | | | | |
| Total cases, | 54[1] | 39 | 45 | |
| Case rate per 100,000 population, | 1.4 | 1.0 | 1.2 | |
| Whooping cough: — | | | | |
| Total cases, | 865 | 679 | 181 | Abington, (0) 12<br>Canton, (0) 15 |
| Case rate per 100,000 population, | 22.1 | 17.3 | 4.7 | |
| Tuberculosis, pulmonary: — | | | | |
| Total cases, | 647[1] | 684 | 652 | |
| Case rate per 100,000 population, | 16.5[1] | 17.6 | 17.4 | |
| Tuberculosis, other forms: — | | | | |
| Total cases, | 70 | 76 | 72 | |
| Case rate per 100,000 population, | 1.8 | 1.9 | 1.9 | |

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[1] The diagnosis in certain cases has been revoked since the January figures were issued.

[2] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

## INTERSTATE RECIPROCAL NOTIFICATION IN FEBRUARY.

| Disease and Locality of Notification. | Health Authority referred to — | Why referred. |
|---|---|---|
| Scarlet fever: Mercersburg, Pa. | Massachusetts State Department of Health notified by Pennsylvania State Department of Health. | Scarlet fever outbreak in Mercersburg Academy, Mercersburg, Pa., and students left before they could be quarantined for their homes in Massachusetts, as follows: Quincy, Dracut, Boston, Newton, Somerville, Worcester. |
| Scarlet fever: Burlington, Vt., | Massachusetts State Department of Health notified by Vermont State Board of Health. | Patient exposed to scarlet fever in Lawrence, Mass., February 2, and later developed the disease. |
| Smallpox: Marlborough, . | State Department of Health, Augusta, Me. | Patient came from Gardiner, Me., January 24, and the disease was unrecognized. Later a case developed in a man who lived in the same house with the unrecognized case. |
| Tuberculosis: Camp Devens, Ayer. | State Department of Health, Hartford, Conn. | Rejected by Camp Devens, Ayer, Mass., on account of chronic pulmonary tuberculosis, to the following addresses: Waterbury, 2 cases; Bridgeport, 7 cases; Manchester, 1 case; Milford, 1 case; Hartford, 3 cases; Ansonia, 1 case; Norwich, 1 case; Meriden, 1 case; New Haven, 1 case. |
| Tuberculosis: Camp Devens, Ayer. | State Department of Health, Augusta, Me. | Rejected by Camp Devens, Ayer, Mass., to the following addresses: Portland, 1 case; Lewiston, 1 case; Ellsworth, 1 case. |
| Tuberculosis, Worcester, . | State Department of Health, Augusta, Me. | Rejected by local exemption board; intended address, Dennysville. |
| Tuberculosis: Camp Devens, Ayer. | State Board of Health, Lansing, Mich. | Rejected by Camp Devens; intended address, Detroit. |
| Tuberculosis: Camp Devens, Ayer. | State Board of Health, Concord, N. H. | Rejected by Camp Devens, Ayer, Mass., to the following addresses: Manchester, 1 case; Hanover, 1 case. |
| Tuberculosis: Camp Devens, Ayer. | State Department of Health, Trenton, N. J. | Rejected by Camp Devens, Ayer, Mass.; intended address, East Orange. |
| Tuberculosis: Worcester, . | State Department of Health, Trenton, N. J. | Rejected by local exemption board; intended address, Trudeau Sanitarium, Trudeau. |
| Tuberculosis: Camp Devens, Ayer. | State Department of Health, Albany, N. Y. | Rejected by Camp Devens, Ayer, Mass.; intended addresses: Glen Falls, 2 cases; Johnstown, 1 case; New York City, 1 case. |
| Tuberculosis: Boston, . . | State Department of Health, Columbus, Ohio. | Patient reported with pulmonary tuberculosis. Home address, Dayton, Ohio. |
| Tuberculosis: Camp Devens, Ayer. | State Department of Health, Harrisburg, Pa. | Rejected by Camp Devens, Ayer, Mass.; intended address, Pittsburg. |
| Tuberculosis: Camp Devens, Ayer. | State Board of Health, Providence, R. I. | Rejected by Camp Devens, Ayer, Mass.; intended addresses: Providence, 1 case; Pawtucket, 1 case. |
| Tuberculosis: Taunton, . | State Board of Health, Providence, R. I. | Rejected by local exemption board; intended address, Providence. |
| Tuberculosis: Boston, . . | State Board of Health, Providence, R. I. | Rejected by local exemption board; intended address, Providence. |
| Tuberculosis: Camp Devens, Ayer. | State Board of Health, Burlington, Vt. | Rejected by Camp Devens, Ayer, Mass.; intended addresses: Middlebury, 2 cases; Bennington, 2 cases. |
| Typhoid fever: Warwick, . | State Board of Health, Concord, N. H. | Patient came from Hillsboro, N. H., where he was employed as a millhand. |
| Typhoid fever: Williamstown, | State Department of Health, Albany, N. Y. | Patient reported as typhoid fever by Williamstown, February 4. Taken to Troy, N. Y., January 31. |

## OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES.

| Disease. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Anthrax, . . . | Wool sorter, . . | North Chelmsford, . | M | 29 | W |
| Anthrax, . . . | Wool sorter, . . | Lawrence, . . . | M | 37 | W |
| Anthrax, . . . | Wool sorter, . . | North Chelmsford, . | M | 29 | W |
| Anthrax, . . . | Beam house, . . | Salem, . . . . | M | – | W |
| Anthrax, . . . | Hide handler, . . | Woburn, . . . | M | 21 | W |
| Brass, . . . . | Munition inspector, . | Lowell, . . . . | F | – | W |
| Brass, . . . . | Metal melter, . . | Cambridge, . . . | M | 47 | W |
| Sulphur dioxide, . . | Laborer, . . . | East Boston, . . | M | 65 | W |
| Wood alcohol, . . | Clerk for cigar company, | Worcester, . . . | F | 20 | W |

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A<br>Chicken Pox. | | 9<br>Diphtheria. | | 19B<br>German Measles. | | 92<br>Lobar Pneumonia. | | 6<br>Measles. | | 19C<br>Mumps. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, | 3,920,988 | 872 | – | 950 | 89 | 705 | 2 | 698 | 423 | 2,950 | 38 | 711 | – |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, | 793,471 | 154 | – | 381 | 37 | 48 | – | 244 | 123 | 509 | 11 | 219 | – |
| 4 | Cities, 150,000–200,000. | | | | | | | | | | | | | |
| 5 | Worcester, | 173,419 | 24 | – | 29 | 3 | 22 | – | 55 | 24 | 45 | – | 7 | – |
| 6 | Cities, 100,000–150,000. | *578,593* | *121* | – | *124* | *18* | *64* | *1* | *118* | *60* | *810* | *11* | *103* | – |
| 7 | Fall River, | 128,317 | 9 | – | 19 | 8 | 3 | – | 29 | 10 | 3 | – | 22 | – |
| 8 | New Bedford, | 117,855 | 14 | – | 9 | 1 | 2 | – | 20 | 10 | 99 | 7 | – | – |
| 9 | Springfield, | 111,983 | 39 | – | 52 | 4 | 29 | – | 37 | 16 | 85 | 1 | 43 | – |
| 10 | Cambridge, | 111,379 | 52 | – | 36 | 3 | 21 | 1 | 22 | 11 | 104 | 3 | 36 | – |
| 11 | Lowell, | 109,059 | 7 | – | 8 | 2 | 9 | – | 10 | 13 | 19 | – | 2 | – |
| 12 | Cities, 50,000–100,000. | *569,719* | *60* | – | *97* | *9* | *25* | – | *108* | *52* | *442* | *5* | *41* | – |
| 13 | Lynn, | 99,952 | 11 | – | 10 | – | 12 | – | 19 | 8 | 15 | – | 4 | – |
| 14 | Lawrence, | 93,060 | 6 | – | 13 | 2 | 2 | – | 14 | 7 | 18 | – | 2 | – |
| 15 | Somerville, | 93,026 | 4 | – | 18 | 3 | 1 | – | 12 | 7 | 157 | 3 | 2 | – |
| 16 | Brockton, | 65,746 | 15 | – | 10 | – | 4 | – | 13 | – | 19 | – | 23 | – |
| 17 | Holyoke, | 62,796 | 3 | – | 5 | – | 1 | – | 6 | 10 | 117 | 1 | – | – |
| 18 | Haverhill, | 52,873 | 9 | – | 8 | 2 | 3 | – | 17 | 7 | 39 | – | 8 | – |
| 19 | Malden, | 51,798 | 9 | – | 20 | 2 | 2 | – | 3 | 4 | 26 | – | – | – |
| 20 | Chelsea, | 50,468 | 3 | – | 13 | – | – | – | 24 | 9 | 51 | 1 | 2 | – |
| 21 | Cities and Towns, 25,000–50,000. | *487,764* | *129* | – | *126* | *6* | *138* | – | *65* | *45* | *328* | *3* | *63* | – |
| 22 | Quincy, | 45,827 | 18 | – | 6 | 2 | 12 | – | 6 | 2 | 15 | – | – | – |
| 23 | Newton, | 45,234 | 22 | – | 20 | 2 | 40 | – | 14 | 6 | 30 | – | 34 | – |
| 24 | Pittsfield, | 44,410 | 15 | – | 7 | – | 44 | – | 2 | 3 | 31 | – | 8 | – |
| 25 | Salem, | 41,082 | 11 | – | 3 | – | 23 | – | 11 | 3 | 40 | 1 | 5 | – |
| 26 | Fitchburg, | 40,830 | 3 | – | 8 | 1 | 6 | – | 5 | 4 | 21 | – | 2 | – |
| 27 | Everett, | 40,435 | 1 | – | 28 | – | – | – | 9 | 2 | 29 | – | 2 | – |
| 28 | Taunton, | 37,381 | 7 | – | 2 | – | – | – | 3 | 8 | 2 | – | 2 | – |
| 29 | Brookline, | 37,147 | 11 | – | 3 | – | 5 | – | 6 | 7 | 50 | – | 3 | – |
| 30 | Medford, | 35,230 | 7 | – | 13 | 1 | 1 | – | 2 | 2 | 14 | – | – | – |
| 31 | Chicopee, | 33,177 | 13 | – | 5 | – | – | – | – | 1 | 32 | – | 2 | – |
| 32 | Waltham, | 31,643 | 19 | – | 11 | – | 3 | – | 5 | 4 | 7 | – | 3 | – |
| 33 | Revere, | 29,643 | – | – | 18 | – | – | – | – | 1 | – | 2 | – | – |
| 34 | Beverly, | 25,725 | 2 | – | 2 | – | 4 | – | 2 | 2 | 57 | – | 2 | – |
| 35 | Cities and Towns, 10,000–25,000. | *575,996* | *198* | – | *105* | *9* | *160* | *1* | *59* | *59* | *661* | *4* | *198* | – |
| 36 | Gloucester, | 24,529 | 8 | – | 3 | – | 3 | – | 2 | 3 | 8 | – | 1 | – |
| 37 | Northampton, | 23,081 | 16 | – | 2 | – | 19 | – | – | 3 | 2 | – | 1 | – |
| 38 | North Adams, | 22,045 | 2 | – | 3 | – | 1 | – | 2 | 3 | 1 | – | 3 | – |
| 39 | Peabody, | 20,489 | – | – | 1 | – | 4 | – | – | 2 | 10 | 1 | 6 | – |
| 40 | Attleboro, | 19,933 | 10 | – | 3 | – | 43 | – | 6 | 4 | 12 | – | – | – |
| 41 | Westfield, | 19,929 | 10 | – | 1 | – | – | – | 6 | 3 | 10 | 1 | – | – |
| 42 | Watertown, | 18,851 | 3 | – | 5 | 1 | 2 | – | 5 | 2 | 9 | – | – | – |
| 43 | Framingham, | 17,728 | 4 | – | – | – | 9 | – | – | 1 | 9 | 1 | 1 | – |
| 44 | Leominster, | 17,688 | 3 | – | 3 | – | 1 | – | 6 | 1 | 6 | – | – | – |
| 45 | Melrose, | 17,627 | 32 | – | 7 | 2 | 3 | – | 2 | 6 | 6 | – | 1 | – |
| 46 | Gardner, | 17,451 | 5 | – | 23 | 1 | 3 | – | 2 | – | 6 | – | 1 | – |
| 47 | Arlington, | 17,264 | 11 | – | 4 | – | 1 | – | – | 3 | 17 | – | – | – |
| 48 | Woburn, | 17,116 | 3 | – | 1 | – | 2 | – | – | – | 8 | – | – | – |
| 49 | Marlboro, | 15,680 | 1 | – | 2 | – | 1 | – | – | 4 | 291 | – | – | – |
| 50 | Methuen, | 15,649 | – | – | – | – | – | – | – | 2 | 1 | – | 1 | – |
| 51 | Newburyport, | 15,542 | 28 | – | 2 | 1 | – | – | 1 | – | 2 | – | 21 | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH,[1] JANUARY, 1918.

| 38A Ophthalmia Neonatorum. | | 7 Scarlet Fever. | | 28–29 Tuberculosis, Pulmonary. | | 30–35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 8 Whooping Cough. | | 63A Anterior Poliomyelitis. | | 61A Cerebrospinal Meningitis. | | 100 Septic Sore Throat. | | 75A Trachoma. | | 107A Trichinosis. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| 173 | 1 | 609 | 14 | 647 | 384 | 70 | 61 | 54 | 6 | 865 | 33 | 5 | 3 | 21 | 16 | 16 | 5 | 9 | – | 9 | – | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 67 | – | 147 | 8 | 209 | 103 | 22 | 16 | 3 | 2 | 290 | 11 | – | 2 | 3 | 3 | 2 | – | 5 | – | – | – | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 15 | 1 | 23 | – | 24 | 12 | 3 | 3 | 2 | – | – | – | – | – | 4 | – | – | – | – | – | – | – | 5 |
| *33* | – | *70* | *1* | *99* | *69* | *11* | *6* | *14* | *2* | *100* | *9* | *4* | *1* | *2* | *4* | *5* | *1* | *1* | – | – | – | 6 |
| 5 | – | 13 | – | 27 | 12 | 1 | 2 | 6 | 1 | 24 | 4 | – | – | – | 1 | 4 | – | – | – | – | – | 7 |
| 13 | – | 8 | – | 40 | 14 | 5 | 2 | 4 | 1 | 12 | 1 | – | – | 1 | 2 | – | – | – | – | – | – | 8 |
| 2 | – | 35 | 1 | 9 | 10 | 3 | 2 | 2 | – | 15 | – | – | – | – | – | – | 1 | – | – | – | – | 9 |
| 4 | – | 11 | – | 13 | 23 | 1 | – | – | – | 34 | 2 | – | – | – | – | 1 | – | – | – | – | – | 10 |
| 9 | – | 3 | – | 10 | 10 | 1 | – | 2 | – | 15 | 2 | 4 | 1 | 1 | 1 | – | – | 1 | – | – | – | 11 |
| *29* | – | *84* | *1* | *96* | *43* | *12* | *9* | *11* | *1* | *169* | *6* | – | – | *1* | *3* | – | *1* | *1* | – | – | – | 12 |
| 1 | – | 20 | – | 14 | 5 | 2 | 2 | 3 | – | 44 | 2 | – | – | – | – | – | – | – | – | – | – | 13 |
| 1 | – | 2 | – | 25 | 9 | 5 | 2 | 3 | 1 | 19 | – | – | – | 1 | 2 | – | – | – | – | – | – | 14 |
| 4 | – | 12 | – | 14 | 9 | – | – | – | – | 9 | 1 | – | – | – | – | – | – | – | – | – | – | 15 |
| 10 | – | 22 | – | 8 | 5 | 2 | – | – | – | 74 | – | – | – | – | – | – | – | – | – | – | – | 16 |
| 2 | – | 9 | – | 5 | 6 | 1 | 2 | – | – | 9 | 2 | – | – | – | – | – | – | – | – | – | – | 17 |
| 1 | – | 7 | – | 13 | 4 | 1 | 1 | 3 | – | 3 | – | – | – | – | – | – | 1 | – | – | – | – | 18 |
| 1 | – | 8 | 1 | 7 | 2 | – | 1 | 2 | – | 8 | 1 | – | – | – | – | – | – | – | – | – | – | 19 |
| 9 | – | 4 | – | 10 | 3 | 1 | 1 | – | – | 3 | – | – | – | – | 1 | – | – | 1 | – | – | – | 20 |
| *13* | – | *79* | *2* | *76* | *35* | *7* | *7* | *6* | – | *103* | *1* | *1* | – | *6* | *1* | *1* | – | *1* | – | – | – | 21 |
| – | – | 5 | – | 8 | 2 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 22 |
| – | – | 8 | – | 5 | 1 | – | 2 | – | – | 21 | – | – | – | – | – | – | – | – | – | – | – | 23 |
| – | – | 11 | 2 | 10 | 4 | – | – | 2 | – | 7 | – | – | – | 1 | – | – | – | – | – | – | – | 24 |
| 5 | – | 2 | – | 5 | 1 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 25 |
| – | – | 5 | – | 14 | 5 | 2 | – | – | – | 6 | – | – | – | 1 | 1 | – | – | 1 | – | – | – | 26 |
| 2 | – | 6 | – | 5 | 1 | 1 | 1 | 1 | – | 13 | – | – | – | – | – | – | – | – | – | – | – | 27 |
| – | – | 1 | – | 7 | 5 | 2 | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | 28 |
| – | – | 14 | – | 2 | 3 | 1 | – | – | – | 54 | 1 | – | – | – | – | – | – | – | – | – | – | 29 |
| 1 | – | 7 | – | 3 | 3 | – | – | – | – | 4 | – | – | – | 2 | – | – | – | – | – | – | – | 30 |
| 2 | – | 2 | – | 7 | 6 | – | 1 | 2 | – | 1 | – | – | – | 1 | – | – | – | – | – | – | – | 31 |
| 1 | – | 4 | – | 4 | 1 | 1 | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 32 |
| – | – | 11 | – | 4 | 1 | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | 33 |
| 2 | – | 3 | – | 2 | 2 | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 34 |
| *10* | – | *87* | – | *54* | *49* | *6* | *7* | *7* | *1* | *109* | *2* | – | – | *1* | *3* | *4* | *2* | *1* | – | *8* | – | 35 |
| – | – | 1 | – | 2 | 2 | – | 1 | 2 | – | 1 | – | – | – | – | – | – | – | 1 | – | – | – | 36 |
| – | – | 10 | – | 3 | 4 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 8 | – | 37 |
| – | – | – | – | – | – | – | – | – | – | 12 | – | – | – | – | – | – | – | – | – | – | – | 38 |
| – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 39 |
| – | – | – | – | – | 2 | – | – | – | – | 1 | – | – | – | – | – | 1 | – | – | – | – | – | 40 |
| 1 | – | 14 | – | 3 | 6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 41 |
| 1 | – | 12 | – | 3 | 1 | 1 | 1 | – | – | 4 | – | – | – | – | – | – | – | – | – | – | – | 42 |
| 1 | – | 1 | – | 4 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 43 |
| – | – | 2 | – | 3 | – | – | – | 1 | 1 | 4 | – | – | – | – | – | – | – | – | – | – | – | 44 |
| 1 | – | 5 | – | 2 | 1 | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 45 |
| 1 | – | 3 | – | 3 | 1 | 1 | – | – | – | 3 | – | – | – | – | – | – | – | – | – | – | – | 46 |
| – | – | 1 | – | 3 | 3 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 47 |
| – | – | 5 | – | 4 | 4 | 1 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 48 |
| – | – | 1 | – | 2 | – | – | – | – | – | – | – | – | – | 1 | 1 | – | – | – | – | – | – | 49 |
| 1 | – | 1 | – | – | 1 | – | – | 1 | – | – | – | – | – | – | 2 | – | – | – | – | – | – | 50 |
| – | – | – | – | 2 | 1 | – | – | – | – | 16 | – | – | – | – | – | – | 1 | – | – | – | – | 51 |

of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them for

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | CITIES AND TOWNS GROUPED IN ORDER OF POPULATION. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | | 19C Mumps. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 15,255 | 2 | – | – | – | – | – | – | – | 1 | – | – | – |
| 53 | Weymouth, | 14,659 | – | – | 3 | – | – | – | – | 1 | – | – | – | – |
| 54 | Winthrop, | 14,443 | 2 | – | 1 | – | 9 | – | 5 | – | 23 | – | – | – |
| 55 | Milford, | 14,088 | – | – | 1 | 1 | 3 | – | – | 3 | 3 | – | – | – |
| 56 | Greenfield, | 14,028 | 18 | – | – | – | 2 | – | 1 | 2 | 1 | – | 119 | – |
| 57 | Wakefield, | 13,664 | 1 | – | 1 | – | 2 | – | – | 1 | 10 | – | – | – |
| 58 | Plymouth, | 13,430 | 10 | – | 3 | – | 10 | 1 | 2 | 2 | 6 | – | – | – |
| 59 | Adams, | 13,340 | – | – | 1 | – | – | – | 1 | – | 1 | – | – | – |
| 60 | Clinton, | 13,266 | 1 | – | 1 | – | 2 | – | 3 | 1 | – | – | 2 | – |
| 61 | Webster, | 13,242 | – | – | 1 | – | 1 | – | 4 | 3 | 3 | – | – | – |
| 62 | Norwood, | 12,879 | 1 | – | – | – | 1 | – | – | – | – | – | – | – |
| 63 | West Springfield, | 12,696 | – | – | 5 | 1 | – | – | – | 1 | 5 | – | 3 | – |
| 64 | Danvers, | 12,309 | – | – | – | – | 19 | – | 3 | 2 | 1 | – | 9 | – |
| 65 | Dedham, | 12,172 | 10 | – | 11 | 1 | – | – | 1 | 1 | 1 | – | 11 | – |
| 66 | Natick, | 11,924 | 5 | – | 2 | – | – | – | 1 | – | 23 | – | 3 | – |
| 67 | Saugus, | 11,625 | – | – | 1 | – | – | – | – | 2 | 1 | – | 1 | – |
| 68 | Easthampton, | 10,692 | 1 | – | 2 | – | 1 | – | 4 | – | 1 | – | 10 | – |
| 69 | Athol, | 10,582 | – | – | 5 | 1 | – | – | 1 | – | – | – | 1 | – |
| 70 | Bridgewater, | 10,468 | – | – | – | – | 9 | – | 1 | 1 | – | – | – | – |
| 71 | Winchester, | 10,451 | 11 | – | – | – | 9 | – | – | – | 37 | 1 | – | – |
| 72 | Braintree, | 10,162 | – | – | 7 | – | – | – | – | 1 | 146 | – | 3 | – |
| 73 | Palmer, | 10,019 | – | – | – | – | – | – | – | 1 | – | – | – | – |
| 74 | TOWNS, 5,000–10,000. | *346,607* | *72* | – | *47* | *4* | *108* | – | *29* | *19* | *219* | – | *39* | – |
| 75 | TOWNS, 2,500–5,000. | *182,889* | *32* | – | *9* | *1* | *43* | – | *7* | *18* | *100* | *1* | *22* | – |
| 76 | TOWNS UNDER 2,500. | *212,530* | *73* | – | *23* | *2* | *31* | – | *9* | *19* | *127* | *1* | *16* | – |
| 77 | STATE INFIRMARY, | | *9* | – | *6* | – | – | – | *4* | *2* | *2* | – | – | – |
| 78 | CAMP DEVENS, | | – | – | *3* | – | *66* | – | – | *2* | *207* | *2* | *3* | – |

In addition to the above there occurred 1 case of actinomycosis in Attleboro; 1 case of anthrax in 1 in Waltham and 1 in Woburn; 1 death from malaria in Springfield; 1 death from pellagra in Middleton;

to the Public Health — Concluded.

| 38A Ophthalmia Neonatorum. | | 7 Scarlet Fever. | | 28–29 Tuberculosis, Pulmonary. | | 30–35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 8 Whooping Cough. | | 63A Anterior Poliomyelitis. | | 61A Cerebrospinal Meningitis. | | 100 Septic Sore Throat. | | 75A Trachoma. | | 107A Trichinosis. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| – | – | – | – | 1 | – | – | **1** | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 52 |
| – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 53 |
| – | – | 6 | – | 1 | **1** | – | – | – | – | 6 | – | – | – | – | – | 1 | – | – | – | – | – | 54 |
| – | – | 4 | – | 2 | – | – | **2** | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | 55 |
| 2 | – | 1 | – | – | – | – | – | – | – | 25 | – | – | – | – | – | – | – | – | – | – | – | 56 |
| – | – | 4 | – | 1 | **2** | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 57 |
| – | – | – | – | 1 | – | – | – | – | – | 3 | – | – | – | – | – | – | – | – | – | – | – | 58 |
| – | – | – | – | 2 | **1** | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 59 |
| – | – | 1 | – | 2 | **2** | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 60 |
| 1 | – | – | – | 2 | **1** | – | – | – | – | 21 | **1** | – | – | – | – | – | – | – | – | – | – | 61 |
| – | – | 2 | – | – | **1** | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | 62 |
| – | | 1 | – | 1 | **1** | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 63 |
| – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 64 |
| – | – | 1 | – | 2 | **1** | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 65 |
| – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 66 |
| – | – | – | – | – | **2** | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 67 |
| – | – | 3 | – | 2 | **2** | – | – | – | – | 4 | **1** | – | – | – | – | – | – | – | – | – | – | 68 |
| – | – | – | – | – | **3** | – | **1** | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 69 |
| – | – | 3 | – | – | **2** | 1 | **1** | – | – | 5 | – | – | – | – | – | – | – | – | – | – | – | 70 |
| – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 71 |
| 1 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 72 |
| – | – | 2 | – | 2 | **3** | – | – | – | – | – | – | – | – | – | – | 1 | **1** | – | – | – | – | 73 |
| *5* | – | *51* | – | *27* | *24* | *4* | *8* | *3* | – | *45* | *3* | – | – | *3* | *1* | *4* | *1* | – | – | *1* | – | 74 |
| – | – | *27* | – | *16* | *8* | *1* | *2* | *7* | – | *27* | *1* | – | – | – | – | – | – | – | – | – | – | 75 |
| *1* | – | *41* | *2* | *14* | *24* | *2* | – | *1* | – | *19* | – | – | – | – | – | – | – | – | – | – | – | 76 |
| – | – | – | – | *21* | *17* | *2* | *2* | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 77 |
| – | – | – | – | *1* | – | – | – | – | – | – | – | – | – | *1* | *1* | – | – | – | – | – | – | 78 |

Winchester; 4 cases of dog bite in Lowell, 2 in Taunton and 1 in Waltham; 2 deaths from dysentery, 3 cases of smallpox, 2 in Boston and 1 in Natick; 1 case of tetanus in Worcester, with 1 death.

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner, Allan J. McLaughlin, M.D.

| | |
|---|---|
| Division of Administration, | Acting Director, Lyman A. Jones, M.D. |
| Division of Sanitary Engineering, | Director and Chief Engineer, X. H. Goodnough, C.E. |
| Division of Communicable Diseases, | Director, Eugene R. Kelley, M.D. |
| Division of Water and Sewage Laboratories, | Director and Chemist, H. W. Clark. |
| Division of Biologic Laboratories, | Director and Pathologist, Milton J. Rosenau, M.D. |
| Division of Food and Drugs, | Director and Analyst, Hermann C. Lythgoe, S.B. |
| Division of Hygiene, | Director, Lyman A. Jones, M.D. |

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Joseph E. Lamoureux, M.D.
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John T. Wheelwright.

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| | |
|---|---|
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| The Eastern District, | Merrill E. Champion, M.D., Wollaston. |
| The Northeastern District, | Arthur A. Brown, M.D., Swampscott. |
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| The Wachusett District, | Francis A. Finnegan, M.D., Ayer. |
| The Connecticut Valley District, | John S. Hitchcock, M.D., Northampton. |
| The Berkshire District, | Howard A. Streeter, M.D., Pittsfield. |

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[1] Leave of absence, military service.

# PUBLIC HEALTH BULLETIN

ISSUED MONTHLY
BY THE
STATE DEPARTMENT OF HEALTH
OF MASSACHUSETTS

APRIL, 1918

**Vol. 5, No. 4**

EUGENE R. KELLEY, M.D., *Commissioner*

*The Common Health of the Commonwealth*

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Publication of this Document
approved by the
Supervisor of Administration.

## CERTAIN DIETARY ESSENTIALS.

AN ideal diet is one which supplies all of the body requirements in the most palatable and easily digested form. It should include daily plenty of water, some of the best quality proteins, a suitable amount of energy-forming foods, sufficient food depended upon for mineral substances, and enough coarse food to provide the necessary bulk and to help in the elimination of the waste product.

In addition, as has been shown by recent biological experiments, an adequate diet must also contain two other substances of which very little is known except that one is soluble in fat and the other soluble in water. For convenience these substances are called fat-soluble A and water-soluble B.[1]

Fat-soluble A is present in only a few foods. It is found in whole milk, cream, butter, the fat in egg yolk, in the animal organs of secretion, such as liver, kidney and sweetbreads, and in the leaf vegetables, such as young string beans, lettuce, spinach and greens of all kinds.

Water-soluble B is present in nearly all natural foods. It is not found, however, in fats from either the animal or vegetable kingdom, in sugars, commercial syrups, polished rice or starch.

The importance in the diet of these two substances is clear from the fact that a lack of water-soluble B causes beriberi. This fact was demonstrated in the Japanese army years ago when the diet consisted mainly of polished rice, and an epidemic of beriberi broke out. The diet was corrected by substituting unpolished rice for the polished rice, and beriberi was finally eradicated.

A lack of fat-soluble A leads to serious eye disease, which finally results in total blindness, but which can be cured by the simple addition of butter fat to the diet.

Not only does a lack of these two substances in the diet result in these two specific diseases, but a diet lacking in these or not containing them in sufficient amounts causes the failure of normal growth and development and makes the individual less resistant to disease.

It is necessary, then, to include in the daily diet food containing these dietary essentials, and this is especially important in regard to the diet of the child.

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[1] Journal, American Medical Association, No. 19, p. 1380.

The ordinary diet is not likely to be lacking in water-soluble B since it is present in nearly all our common foods, but in order to provide for fat-soluble A we must include milk, or milk fats, egg yolk, leaf vegetables of some kind, or animal organs, such as liver, etc.

Greens are expensive, a large amount is necessary, and they are not easily obtained at all seasons of the year. One would not care to eat liver, kidney, etc., too often, and neither are they good foods for children. There is left, then, milk and milk fat, namely, butter or cream, and yolk of egg, as a choice of foods to supply fat-soluble A.

The wisest and most economical course to follow is to use whole milk freely. It is a food suitable for all members of the family. It supplies not only fat-soluble A but also water-soluble B, and at the same time furnishes the body with the best protein for growth, with mineral substance and with easily digested sugar.

Without question, be it for an adult or a growing child, a mixed diet which is rich in milk is a safe one, and will provide the body with any food essential which may be lacking in the other foods.

The most ideal diet is one which allows daily, in addition to the other foods, one pint and a half of milk for each child and one pint for each adult.

## TUBERCULOSIS AS RELATED TO THE "NEW PUBLIC HEALTH."[1]

BY A. K. STONE, M.D.

MANY years ago it is reported that a wild huntsman, who, in a fit of rage and jealousy, had killed a peaceful shepherd, made reply to the question, "Where is Abel, thy brother?" "I know not. Am I my brother's keeper?" And this very denial of any responsibility for his brother was, in fact, the beginning of community responsibility. The recognition of this principle, however, made slow progress, and it was only fully enunciated when nineteen hundred years ago the Great Teacher boldly said, "Thou shalt love thy neighbor as thyself." And later his great Apostle insisted that "we are all members of the same body" and that one portion cannot be ill without affecting all the other members.

Through the centuries this idea has but gradually gained strength, been better understood and applied. It is, however, only within the last one hundred and fifty years that there has been a systematic development of the people themselves as an organized whole. Even this advance has not been by any means a steady progression, nor has it been universal.

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[1] Portions of a paper read by Dr. A. K. Stone at a meeting of the Tuberculosis Dispensary Nurses of Eastern Massachusetts at the Evans Memorial, Feb. 14, 1918.

"What," you ask, "has all this to do with the 'new public health?'" If I may state it crudely, the "old public health" was materialistic. It had to do with the suppression of epidemics (our valuable Health Department first came into being as the result of a smallpox epidemic); the protection of the public was its first duty. Thus to check epidemics, to provide pure water and proper sewage systems, to abate nuisances, to ensure pure food, vaccines and sera were the orthodox activities of the health authorities. Much was accomplished. Let me quote the historian Lecky who, in 1896, wrote on the growth of democracy and liberty during the reign of Queen Victoria. He writes, "The great work of sanitary reform has been, perhaps, the noblest legislative achievement of our age, and, if measured by the suffering it has diminished, has probably done far more for the real happiness of mankind than all the many questions that make and unmake ministries."

We have gradually realized that although every one had a right to be protected from epidemics as far as possible, and to be assured that he had pure water, good sewage, and was protected from exploitation by avaricious men in the matter of his food, there was still something more that must be done, — that men and women cannot be allowed to do as they please with their own lives, whether their actions are the result of their own wish and volition or entered into because of tribal customs or from force of circumstances. It came to be recognized that everybody had a duty to the public to be well and healthy, and therefore to be a potential economic force for the upbuilding of the community. Gradually it became evident that some of the individuals of the community were not doing their own share to make use of all the benefits that the various sanitary reforms had put at their disposal, and study was made to find the answer for this. There are many explanations, but it can largely be summed up in one word, *ignorance,* sometimes willful, sometimes enforced, but largely just plain *ignorance.* Now the growth of this last idea in public health work, the "new public health," has been in a great measure due to the development of the Anti-Tuberculosis Campaign.

Following hard upon the teachings of Pasteur, it came to be recognized that there was in the community, after epidemics had been eliminated, after pure water had been supplied, after the sewage had been cared for, one form of contagious disease which outstripped the rest in its death toll on the community the world over. Tuberculosis, the great White Plague, was the leader in the causes of death. Koch had demonstrated that the bacilli of tuberculosis were the cause of the disease, and that each person dying of the disease was a potential source of infection, and from each individual focus other cases arose. The onset of the infection in all these cases was slow and insidious, and, hence, usually unrecognized and unfeared. An educational propaganda was started against tuberculosis. It was very fortunate that the start was made with this disease. The bacillus of tuberculosis had no friends; on the other hand, everybody had lost some dear relative or near friend and was willing to join any crusade which should make a similar loss either to themselves or to any one else less possible.

With the erection of the Massachusetts State Sanatorium at Rutland in 1898, the first State institution for the care of tuberculosis patients, the country-wide crusade against tuberculosis may be said to have begun.

It was but natural that the active physicians who were largely the leaders should have turned their attention almost exclusively to cure. There was hope of cure; rest, fresh air and good food had been demonstrated as producing cures, first in the selected resorts, later everywhere, and the fact was widely advertised that it was possible for the early case to get well. This good news was proclaimed everywhere, and the sanatoria became popular with the people, resulting in many arrested cases, each one in turn a living demonstration of the fact that the diagnosis of tuberculosis did not necessarily mean a sentence of death as had been the general opinion of earlier days.

Soon, however, it was realized that refinements of diagnosis were not sufficient. A more comprehensive program must be planned out and carried into execution. The State plan was evolved of having the sanatoria supplemented by the municipal and county hospitals to act as places of refuge for the far-advanced case and to provide shelter for emergencies, and also to serve as clearing stations for persons on the way to the sanatoria. Finally, in order that the community should be in close connection with the scheme it was decided that there should be in every town of 10,000 inhabitants a dispensary so that doctor and nurse might help bring every one needing attention in close touch with the hospital and sanatorium. To the dispensary can come the person with malaise and a cough to have the question answered — the question which means so much to the anxious asker — "Have I tuberculosis?" To the dispensary is to be referred the arrested case coming from the sanatoria. Here he reports at intervals, or is under the observation of the nurse, who knows of his home conditions, of his work, of his progress or maybe of his retrogression and need of sanatorium treatment. Children from families with tuberculosis can be brought to the dispensary physician from time to time for examination, and wise advice and even aid provided in special cases.

But what of your part in this great advance movement? You are to be the teachers of the people. It is no longer the nurse who looks after the individual patient, — the old conception of the nurse. That work is just as necessary and just as important as ever it was, and serves as a necessary background of all training for public health work to which still other training must be added. The care of the tuberculosis patient when bedridden is the care of any sick person. It has certain difficulties, for the sickness is long drawn out and discouraging, and the downward course is interrupted at times by periods of feverish restlessness and unreasonable hopefulness. This period of nursing, however, is in the main that of any chronic mortal sickness, with the addition of eternal vigilance for the protection of the nurse and the family from infection if the patient is at home.

The really technical, special ability required in tuberculosis nursing is in the care of the early and moderately advanced cases, where cure is expected. There one has to do with men and women alternately swayed by conflicting hopes and fears; periods of undue elation or deep depression; times of revolt against all rules and regulations of life by the sanatoria authorities are sometimes shown by reckless violations of rules, and at others by sullen despondency. Here is where the skilled nurse comes into play. Whether she knows it or not she must be a psychologist and able to read the moods of the patient and know what is making him optimistic or depressed. Cheerfulness and optimism must be her stock in trade, but always tempered with common sense. The convalescent patient must be restrained and held in check until the cure is completed. The period of partial arrest is often the hardest portion of the illness for both patient and nurse, and the duty of holding the patient to the doctor's orders and reporting to the physician the acts of the patient and the correct interpretation of these acts constitute the special attributes of the wise tuberculosis nurse. They are few, and are wonderful when found.

For the public health nurse there should be first of all the background of general nursing that one may know what actual care of the sick means. The social worker who has not this training is to my mind always handicapped in her dealings with the sick. Her great work must be that of an educator in the A B C's of health. For the present she must teach, in the homes of grown-ups who are ignorant and distrustful, those things which we hope the children of this generation will absorb during their general elementary education.

For you as nurses, the open door will be through the maternity case, the acute sickness, the reported tuberculosis patient, or the arrested case returned from the sanatorium, or maybe the man rejected from the army. Few of these rejected men are active open cases, but rather such as need watching to see that they do not become active again. New cases must be supervised. Clews must be followed. Recently in a mill city 13 cases of tuberculosis were reported in persons who worked until within a couple of weeks of their death without having seen a physician, much less having been within the protecting walls of a hospital. Such cases are a menace and a source of danger to their fellow workmen, and they must not be allowed.

It is the arrested cases and their families which must be watched. They are the group which keep up the death rate in tuberculosis. Underfeeding and overwork may make them open cases again. Their children who have had mild infections may, with undue exposure to cold or to underfeeding, become active again. It is said that only about 5,000 cases of tuberculosis had developed among the 4,000,000 Italian troops, but that 30,000 cases had been returned from Austria from the few thousands of prisoners that had been taken, — an evidence of what underfeeding and privation will do.

It is your duty to look after this army of rejected draft soldiers, to keep in touch with the arrested cases and their families in the community in which you live; you must know your people, have their love and respect, and keep their confidence, even though they flatly disobey your instructions. Some day you will win them. You are the teacher in all health matters.

This is the "new public health," this is your duty to the community, and tuberculosis is the chief of the open doors by which you may gain entrance to the affections of your community.

# THE USE OF AMMONIA WITH BLEACH IN THE TREATMENT OF WATER (CHLORAMINE).[1]

THE first proposal to use ammonia with hypochlorite in the sterilization of water seems to have been made by Race (Surveyor, London, Eng., March 3, 1916). He was led to do this by some work of Rideal several years earlier, which indicated that the chlorine of bleach formed substitution products with ammonia and with proteid bodies which were of a higher germicidal value than the bleach itself.

It is assumed that the compound formed with ammonia is $NH_2Cl$ and to this body the name "chloramine" has been applied. No reference is made to this compound in the older textbooks, and current literature has very little to say about it. Raschig[2] states that it is formed rapidly and nearly quantitatively at low temperatures in dilute mixtures of ammonia and sodium hypochlorite. Bray, Dowell and Noyes[3] apparently accept this statement. Dakin[4] and others have given the name "chloramine" to certain aromatic compounds, containing the NCl linkage, and have shown that nearly all compounds containing the NCl group are efficient germicides.

It is generally agreed that aside from the direct oxidizing action of hypochlorites there is a secondary action; that is, a combination with proteins or ammonia to form chloramine. Race found in an experimental plant at Ottawa that the amount of available chlorine required for disinfection of water could be reduced from about 1 part per million to about .25 part if .13 part of free ammonia was added.

The results of some preliminary laboratory experiments made along the same lines at the Lawrence Experiment Station are shown in the following table. The experiments were made in bottles using Merrimack River water. The designated amounts of bleach or the mixture of bleach and ammonia were added and tests made after one and twenty-four hours' contact with the chemicals. The results given in the table show the increased effect of a given amount of bleach when half as much ammonium hydrate is added. Not enough data are as yet available to show how much the bleach may be reduced when ammonia is added and still give the same results as a given amount of bleach alone. The few results obtained indicate that it cannot be reduced as much as one-half. In experiments made by us on the treatment of sewage, the addition of ammonia had little effect. This was to be expected as sewage contains from five to ten times as much "free ammonia" as would be added with the bleach.

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[1] From the Division of Water and Sewage Laboratories.

[2] Chem. Ztg., 31, 926.

[3] J. Am. Chem. Soc., May, 1917, 905.

[4] Proc. Roy. Soc., London, 89, 232–251, and Brit. Med. Jour., 1916, 1, 160–162.

*Table showing the Effect of using Ammonia with Hypochlorite in the Treatment of Merrimack River Water.*

| AVAILABLE CHLORINE (PARTS PER MILLION). | Ammonia (Parts per Million). | Time of Contact (Hours). | BACTERIA PER CUBIC CENTIMETER. | | | B. COLI IN — | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 4 days 20° C. | 24 HOURS, 37° C. | | .01 Cubic Centimeter. | .10 Cubic Centimeter. | 1.0 Cubic Centimeter. | 10 Cubic Centimeters. |
| | | | | Total. | Red. | | | | |
| Control, . . | .00 | 1 | 1,400 | 360 | 50 | + | + | + | + |
| 1.00, . . | .00 | 1 | 22 | 14 | 1 | 0 | 0 | 0 | 0 |
| 1.00, . . | .50 | 1 | 7 | 4 | 0 | 0 | 0 | 0 | 0 |
| Control, . . | .00 | 24 | 2,000 | 100 | 40 | 0 | + | + | + |
| 1.00, . . | .00 | 24 | 75 | 80 | 60 | 0 | 0 | 0 | 0 |
| 1.00, . . | .50 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Control, . . | .00 | 1 | 15,000 | 500 | 230 | + | + | + | + |
| 1.00, . . | .00 | 1 | 14 | 10 | 2 | 0 | 0 | 0 | 0 |
| 1.00, . . | .50 | 1 | 8 | 12 | 0 | 0 | 0 | 0 | 0 |
| Control, . . | .00 | 24 | 4,700 | 3,400 | 1,000 | 0 | + | + | + |
| 1.00, . . | .00 | 24 | 6 | 18 | 8 | 0 | 0 | 0 | 0 |
| 1.00, . . | .50 | 24 | 1 | 7 | 2 | 0 | 0 | 0 | 0 |
| Control, . . | .00 | 24 | 12,500 | 220 | 180 | + | + | + | + |
| 1.50, . . | .00 | 24 | 30 | 20 | 0 | 0 | 0 | 0 | 0 |
| 1.50, . . | .75 | 24 | 18 | 17 | 3 | 0 | 0 | 0 | 0 |
| Control, . . | .00 | 1 | 25,000 | 120 | 100 | + | + | + | + |
| 1.50, . . | .00 | 1 | 470 | 10 | 5 | 0 | 0 | 0 | 0 |
| 1.50, . . | .75 | 1 | 80 | 6 | 0 | 0 | 0 | 0 | 0 |
| Control, . . | .00 | 24 | 13,000 | 50 | 20 | + | + | + | + |
| 1.50, . . | .00 | 24 | 27 | 5 | 0 | 0 | 0 | 0 | 0 |
| 1.50, . . | .75 | 24 | 10 | 2 | 0 | 0 | 0 | 0 | 0 |

## FREE DIAGNOSIS OF PATHOLOGICAL MATERIAL.

Late in September of last year the State Department of Health announced the free diagnosis of pathological material facilities made possible through the cordial co-operation of the Harvard Cancer Commission, which volunteered to do the work,

The following tabulation shows the extent to which this service has been employed during its first six months: —

*Statistics of the Free Diagnosis Service for the Period Oct. 1, 1917, to April 1, 1918.*

| | |
|---|---|
| Specimens received of patients in hospital, | 87 |
| Other specimens, | 77 |
| Total, | 164 |

The number of specimens during the first three months was 64, and during the second, 100.

Among the specimens received were the following: —

| | |
|---|---|
| Carcinoma of breast, | 10 |
| Carcinoma of uterus, | 10 |
| Epidermoid carcinoma, | 24 |
| Non-malignant specimens of breast, | 13 |
| Non-malignant specimens of uterus, | 20 |
| Tubercular lymph nodes, etc., | 8 |
| Miscellaneous tumors, | 31 |

It is desired that the service be used much more extensively.

Details regarding the submission of specimens may be found in the issue of the Public Health Bulletin for August, 1917, or may be obtained by writing the State Department of Health.

## APPOINTMENTS.

Dr. John S. Hitchcock of Northampton, State District Health Officer, has been appointed Director of the Division of Communicable Diseases to succeed Dr. Kelley, the recently appointed Commissioner of Health. This appointment became effective April 1, 1918.

Miss Bernice W. Billings of Winchester, formerly Public Health Nurse under the Trustees of Hospitals for Consumptives, has been appointed Chief of the Sub-Division of Tuberculosis, under the Division of Communicable Diseases, the appointment taking effect April 1, 1918.

## REPORT OF DIVISION OF FOOD AND DRUGS.

During the month of March, 1918, samples were collected in 47 cities and towns.

There were 696 samples of milk examined, of which 164 were below the legal standard, 17 samples were skimmed milk not properly labeled, and 42 samples contained added water.

There were 192 samples of food examined, of which the following were adulterated: 1 sample of decomposed deviled meat, 1 sample of skimmed condensed milk, 1 sample of corn meal containing ground corncobs, 1 sample of cream below the legal standard, 1 sample of compound lard not properly labeled, 1 sample of maple sugar containing cane sugar, 5 samples of sausage containing starch in excess of 2 per cent., 1 sample of old walnuts, 25 samples of olive oil containing either cottonseed oil, corn oil or other foreign oil, 2 samples of decomposed scallops, and 2 samples of decomposed shrimp.

There were 65 samples of drugs examined, of which 24 were adulterated. These consisted of 5 samples of camphorated oil, 14 samples of spirit of nitrous ether, 2 samples of spirit of peppermint, all deficient in the active ingredient, and 3 samples of proprietary drugs improperly labeled.

The police departments submitted 31 samples of poisons for examination, and the Quincy police department submitted 2 samples of liquor for examination.

There were 47 convictions for violation of the laws, $740 in fines being imposed. Joseph Battazio of Leominster, on two counts, John C. Moynihan, on two counts, and Samuel J. Hughes, on three counts, both of Newburyport, Nicholas Kirchner of Pittsfield and Nelson Lamoureux of Attleboro were convicted for violation of the milk laws. The Mills Tea and Butter Corporation of Attleboro, Matthew F. Butler of East Boston, Harrison Brothers Company of Boston, Max Suher of Springfield, Waldemar Kentop of Lynn and John Baran of Fall River were convicted for violation of the food laws. Harrison Brothers Company of Boston and Matthew F. Butler of East Boston appealed their cases. Eugene A. Piderzoli of Framingham, Herbert E. Davis, James G. Elkind and George O. Levasseur, all of Worcester, Otto Morgner and Max Miller of East Boston, Michael O'Brien of Roxbury and Themisocles V. Campagna of Boston were convicted for violation of the drug laws. Messrs. Davis, Elkin and Levasseur of Worcester appealed their cases. Joseph Malatesta of Boston, on four counts, David Aznavoorian, George Harrison, Charles J. Jaffe, Karkos Yanagatchian, Martin Bagdigian, Frank O. Berquist, Peter Charles, Abraham Lurensky, Myer Rosenblatz, George K. Yesemain and Hyman Zucker, all of Charlestown, Harry Newman of Chelsea, on two counts, Morris L. Rosen, Abraham Rosenberg, Patrick Calapi, Ramon Lufkin, Harry Rosenburg and James H. Scrufutis, all of Boston, and Charles Campiani of East Boston were convicted for violation of the cold-storage laws. Messrs. Lurensky and Zucker of Charlestown appealed their cases.

There were 5 confiscations made, consisting of 192 pounds of decomposed chickens, 810 pounds of decomposed shrimp, and 160 pounds of decomposed scallops.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

Five samples of milk containing added water, produced by Mrs. Cornelia Schroot of Newton Center; 9 samples of milk containing added water, produced by Richard Dugdale of Fairhaven; 2 samples of milk containing added water, produced by Warren Proctor of Leominster; 3 samples of milk containing added water, produced by John Bentmettel of Dartmouth; 1 sample of milk containing added water, produced by Cass & Daley of Middleton; 1 sample of milk containing added water, produced by Walter J. D. Bullock of Little Compton, R. I.; 1 sample of skimmed condensed milk, manufactured by Libby, McNeill & Libby of Boston, and put up by The Swedish Supply Company of Worcester; 1 sample of sausage containing starch in excess of 2 per cent., from George P. Borlen of Lynn; 2 samples of sausage containing starch in excess of 2 per cent., from the Front Street Market of Worcester; 2 samples of decomposed scallops, from the Morehead City Sea Food Company of Morehead City, N. C.; and 1 sample of decomposed shrimp, from J. B. Blood Company of Lynn.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of February, 1918: 127,770 dozens of case eggs, 130,035 pounds of broken-out eggs, 662,321 pounds of butter, 1,967,102 pounds of poultry, 1,550 pounds of game, 5,329,232 pounds of fresh meat and fresh meat products, and 2,106,043 pounds of fresh food fish, making a total of 10,324,053 pounds.

There was on hand in storage on March 1, 1918, 40,950 dozens of case eggs, 376,632 pounds of broken-out eggs, and 3,752,997 pounds of butter, making a total of 4,170,579 pounds.

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY DURING THE MONTH OF MARCH, 1918.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of March, 1918: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, . . . | 818 | 100 | 390 | 108 | 220 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, . . . . . . | 353 | 71 | 282 | |
| *Typhoid fever (Widal test), . . | 112 | 13 | 88 | 11 |
| Typhoid fever (culture test), . . | 21 | 1 | 20 | |
| Malaria, . . . . . . | 3 | – | 3 | |
| Gonorrhœa, . . . . . . | 162 | 31 | 131 | |
| Miscellaneous, . . . . . | 131 | – | – | |

Total number of examinations made, 1,600.

## QUARTERLY REPORT UPON THE DISTRIBUTION OF BIOLOGICAL PRODUCTS AND DIAGNOSTIC OUTFITS.

The following gives the total number of biological products and diagnostic outfits distributed by the State Department of Health during the three months ending March, 1918: —

### *Biological Products.*

| | |
|---|---|
| Diphtheria antitoxin: — | |
| 12,000 units (for the Boston City Hospital), | 937 bottles. |
| 6,000 units (for the Boston City Hospital), | 24 bottles. |
| 12,000 units, | 164 bottles. |
| 6,000 units, | 1,458 bottles. |
| 3,000 units, | 10,507 bottles. |
| 2,000 units (for the Boston City Hospital), | 130 bottles. |
| 1,500 units, | 1,389 bottles. |
| 1,000 units, | 1,464 bottles. |
| 750 units, | 865 bottles. |
| Smallpox vaccine: — | |
| Capillary tubes, | 31,034 |
| Bulk, | 7,200 |
| Typhoid vaccine: — | |
| Vials, | 2,301 |
| Bulk, | 5,525 |
| Typhoid-Paratyphoid vaccine: — | |
| Vials, | 2,091 |
| Bulk, | 3,150 |
| Paratyphoid vaccine: — | |
| Vials, | 316 |
| Bulk, | 50 |
| Antimeningitis serum, | 1,563 bottles. |
| Silver nitrate solution, | 10,620 ampoules. |

### *Diagnostic Outfits.*

| | |
|---|---|
| Diphtheria culture tubes, | 3,898 |
| Culture media, | 15 |
| Tuberculosis sputum bottles, | 1,454 |
| Pneumonia outfits, | 302 |
| Widal outfits, | 437 |
| Typhoid culture outfits, | 125 |
| Malaria-Gonorrhœa outfits, | 174 |

## RÉSUMÉ OF COMMUNICABLE DISEASES FOR MARCH, 1918.

### General Prevalence.

There were 12,766 cases of communicable diseases reported during March, which is an increase of 2,816 cases over the total for the previous month, and 4,335 cases more than the March, 1917, total of 8,431 cases.

This increase is largely due to measles, German measles, whooping cough and mumps.

No outbreaks of importance occurred during March. There were instances of local prevalence of disease, but not in the form of an outbreak.

*Actinomycosis.* — One case of actinomycosis was reported from Attleboro. This case was confirmed by laboratory test.

*Epidemic Cerebrospinal Meningitis.* — Epidemic cerebrospinal meningitis was reported to a much greater extent than for the corresponding month last year. The cases occurred in the more thickly settled parts of the State, and they apparently had no connection with military movements. As a rule, they were isolated cases with no evident source of infection.

*Lobar Pneumonia.* — There seems to be a large number of lobar pneumonia cases reported. Whether these exceed the average number of cases we are unable to determine as we have had no material on which to base an endemic index.

*Smallpox.* — Ten cases of smallpox were reported during March. A case reported from Boston proved to have been infected in New Hampshire. A case in Milton was first diagnosed as chicken pox, and later proved to be smallpox. The patient in this instance was a traveling man and no definite contact could be learned. A very mild case occurred in Lowell which was apparently due to direct contact from a previous case in the family. Vaccination had been tried unsuccessfully three times. A case imported from Maine occurred at the Tewksbury State Infirmary. This patient had visited friends while in an eruptive stage, but so far as is known, no secondary cases occurred. Five cases in Marlborough followed a case in February. In Hardwick a case of smallpox occurred in a farm hand. The only possible point of infection was a visit to a city ten days previous, and as no smallpox is known to be present in that city, the source of infection is not at all certain in this case.

*Suppurative Conjunctivitis.* — Suppurative conjunctivitis, or "pink eye," was reported from Amherst, in the latter part of March. This is of interest only from the fact that the cases were discovered and reported by the school nurse and not by physicians. Physicians seem to forget that suppurative conjunctivitis in adults is reportable.

*Trichinosis.* — Trichinosis was reported from Brockton. Two cases occurred in one family and one in another. They were apparently infected from the same lot of pork.

*Venereal Diseases.* — The reports on venereal diseases are commencing to come in more freely, and we hope physicians will recognize the importance of the complete reporting of these diseases.

*Diseases on the Premises of Milk Handlers.* — Five cases of communicable disease occurred on farms producing milk. Three cases of scarlet fever, one each from Weymouth, Westfield and Brockton; 1 case of diphtheria from Springfield; and 1 case of smallpox from Hardwick. Isolation was enforced in each instance, and so far as is known no secondary cases occurred.

## OUTBREAKS AND EPIDEMICS.

*Diphtheria.* — Eighteen cases of diphtheria were reported from Wakefield for the month. Eight of the cases occurred among boys from ten to fourteen years of age who were attending gymnasium classes at the Y. M. C. A. An interesting feature connected with these cases was that a group of sailors from the Rifle Range were at the Y. M. C. A. at the same time and used the same lockers as these boys. Four days later one of these sailors was reported sick and died the following day, the cause of death being given as diphtheria. It was reported that this man came to the Rifle Range from New York about six days before and was feeling sick. Four contacts with this case also came down with diphtheria. The remaining cases in Wakefield were scattered throughout the town.

## RARE DISEASES.

*Anterior poliomyelitis* was reported from Boston, 1; Cambridge, 1; Everett, 1; Fall River, 1; and Lowell, 2.

*Anthrax* was reported from Boston, 1; and Lynn, 1.

*Dog bite* was reported from Worcester, 1.

*Dysentery* was reported from Andover, 1; and Boston, 1.

*Epidemic cerebrospinal meningitis* was reported from Billerica, 1; Boston, 18; Brockton, 1; Cambridge, 2; Camp Devens, 1; Chelsea, 3; Danvers, 1; Fall River, 2; Gloucester, 1; Greenfield, 1; Haverhill, 1; Lawrence, 2; Lowell, 5; Malden, 1; Newburyport, 1; Quincy, 1; Salem, 3; Somerville, 1; Winchendon, 1; and Worcester, 4.

*Malaria* was reported from Boston, 1; and Pittsfield, 1.

*Pellagra* was reported from Somerville, 1; and Worcester, 1.

*Septic sore throat* was reported from Boston, 2; Brookline, 1; Dover, 1; Lynn, 1; Melrose, 1; Newburyport, 2; Newton, 2; Springfield, 1; Waltham, 1; and Williamsburg, 1.

*Smallpox* was reported from Boston, 1; Hardwick, 1; Lowell, 1; Marlborough, 5; Milton, 1; and State Infirmary, 1.

*Tetanus* was reported from Fall River, 1; and Sudbury, 1.

*Trachoma* was reported from Boston, 5; Cambridge, 1; Lawrence, 1; and Newburyport, 1.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | February, 1918. | March, 1918. | March, 1917. |
|---|---|---|---|
| Total cases, | 9,950 | 12,766 | 8,431 |
| Case rate per 100,000 population, | 253.8 | 325.6 | 219.0 |

### *Certain Prevalent Diseases.*

| | February, 1918. | March, 1918. | March, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[1] |
|---|---|---|---|---|
| Diphtheria: — | | | | Wakefield, (1) 18<br>Medford, (3) 9<br>Templeton, (0) 6 |
| Total cases, | 678 | 747 | 858 | |
| Case rate per 100,000 population, | 17.3 | 19.1 | 22.3 | |
| Measles: — | | | | Plymouth, (1) 11<br>Dartmouth, (2) 54<br>Boston, (702) 876<br>Braintree, (4) 38<br>Brockton, (11) 45<br>Brookline, (33) 108<br>Cambridge, (150) 225<br>Hingham, (1) 23<br>Norwood, (3) 46<br>Quincy, (28) 280<br>Beverly, (17) 320<br>Chelsea, (28) 118<br>Everett, (18) 60<br>Haverhill, (40) 129<br>Salem, (9) 46<br>Arlington, (5) 44<br>Belmont, (2) 40<br>Somerville, (70) 103<br>Watertown, (13) 345<br>Winchester, (3) 45<br>Ashland, (0) 79<br>Marlborough, (1) 55<br>Natick, (2) 27<br>Newton, (65) 120<br>Ayer, (0) 27<br>Hudson, (1) 22<br>Springfield, (86) 134 |
| Total cases, | 3,471 | 4,018 | 2,852 | |
| Case rate per 100,000 population, | 88.6 | 102.5 | 74.1 | |
| Scarlet fever: — | | | | Taunton, (5) 10<br>Pittsfield, (6) 13 |
| Total cases, | 537 | 537 | 721 | |
| Case rate per 100,000 population, | 13.7 | 13.7 | 18.7 | |
| Typhoid fever: — | | | | |
| Total cases, | 39 | 41 | 69 | |
| Case rate per 100,000 population, | 1.0 | 1.0 | 1.8 | |
| Whooping cough: — | | | | Attleboro, (1) 16<br>Boston, (123) 212<br>Canton, (3) 15<br>Lawrence, (9) 33<br>Weston (0) 9<br>Gardner, (2) 39<br>Adams, (0) 7 |
| Total cases, | 679 | 759 | 279 | |
| Case rate per 100,000 population, | 17.3 | 19.4 | 7.2 | |
| Tuberculosis, pulmonary: — | | | | |
| Total cases, | 684 | 829 | 698 | |
| Case rate per 100,000 population, | 17.4 | 21.1 | 18.1 | |
| Tuberculosis, other forms: — | | | | |
| Total cases, | 76 | 86 | 67 | |
| Case rate per 100,000 population, | 1.9 | 2.2 | 1.7 | |

---

[1] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

## INTERSTATE RECIPROCAL NOTIFICATION IN MARCH.

| DISEASE AND LOCALITY OF NOTIFICATION. | Health Authority referred to — | Why referred. |
|---|---|---|
| Diphtheria; Milton, N.Y., . | State Department of Health, Albany, N. Y., notified Massachusetts Department of Health. | Two possible diphtheria carriers left Milton, N. Y., for Holyoke. |
| Lobar pneumonia; Pittsfield, | State Department of Health, Albany, N. Y. | Case reported by the Pittsfield Board of Health. Residence of patient, Braynard, N. Y. |
| Tuberculosis; Camp Devens, | State Department of Health, Des Moines, Ia. | Discharged from Camp Devens and returned to his home in Iowa. |
| Tuberculosis; Camp Devens, 4 cases. | State Department of Health, Hartford, Conn. | Discharged from Camp Devens and returned to their homes in Connecticut. |
| Tuberculosis; Camp Devens, | State Department of Health, Augusta, Me. | Discharged from Camp Devens and returned to his home in Maine. |
| Tuberculosis; Camp Devens, | State Board of Health, Concord, N. H. | Discharged from Camp Devens and returned to his home in New Hampshire. |
| Tuberculosis; Camp Devens, 10 cases. | State Department of Health, Albany, N. Y. | Discharged from Camp Devens and returned to their homes in New York. |
| Tuberculosis; Camp Devens, | State Board of Health, Burlington, Vt. | Discharged from Camp Devens and returned to his home in Vermont. |
| Smallpox; Boston, . . | State Board of Health, Concord, N. H. | Patient came from Groveton, N. H. to Boston, February 27. Onset of disease February 17. |
| Smallpox; Milton, . . | State Department of Health, Hartford, Conn. | Patient was a traveling salesman and had been in Hartford, Waterbury and Litchfield, Conn., until February 20. Onset of disease February 23 or 24. |

## OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES.

| DISEASE. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Anthrax,[1] . . . . | Hide handler, . . | Boston, . . . . | M | 52 | W |
| Anthrax, . . . . | Shoe cutter, . . . | Lynn, . . . . | M | 44 | W |
| Dermatitis, . . . | Miller, . . . . | Springfield, . . . | F | 33 | W |
| Poisoning by brass, . | Welder, . . . . | Fitchburg, . . . | M | 33 | W |
| Carbon monoxide, . . | Winder, . . . . | Boston, . . . . | F | 24 | W |
| Lead, . . . . . | Enameling, . . . | Everett, . . . . | M | 35 | W |
| Nitrous fumes, . . | Paper maker, . . | Springfield, . . . | M | 28 | W |

[1] This case came from Manchester, N. H., to Boston for treatment.

# NEW LEGISLATION.

## General Acts, Chapter 58.

### An Act to provide for the physical examination of inmates of penal institutions.

*Be it enacted, etc., as follows:*

Section 1. The warden of the state prison, the superintendents of the Massachusetts reformatory, the reformatory for women and the prison camp and hospital and the keepers and masters of jails and houses of correction shall cause a thorough physical examination to be made by a competent physician of each inmate in their respective institutions committed for a term of thirty days' imprisonment or more. In conducting the examination special attention shall be given to determining the presence of communicable diseases, particularly gonorrhœa, syphilis and pulmonary tuberculosis.

Section 2. It shall be the duty of the state department of health to promulgate specifications governing the manner and time of the examinations hereby required, to prescribe the medical records to be kept, and to require such laboratory or other diagnostic aids to be used as in its judgment are expedient.

Section 3. Any officer named in section one who neglects or refuses to comply with the provisions of this act or who violates any rule or regulation of the state department of health made under authority hereof, shall forfeit a sum not exceeding fifty dollars for each offence.

Section 4. This act shall take effect on the first day of July, nineteen hundred and eighteen. [*Approved March 11, 1918.*

## General Acts, Chapter 96.

### An Act relative to reports and records of venereal diseases.

*Be it enacted, etc., as follows:*

Section 1. Hospital, dispensary, laboratory and morbidity reports and records pertaining to gonorrhœa or syphilis shall not be public records, and the contents thereof shall not be divulged by any person having charge of or access to the same except upon proper judicial order or to a person whose official duties, in the opinion of the commissioner of health, entitle him to receive information contained therein.

Section 2. Laboratory, dispensary and morbidity reports and records of cases of gonorrhœa or syphilis, other than the permanent records of hospitals and institutions, shall be destroyed at the expiration of five years from the year in which they were made.

Section 3. Violation of any provision of this act shall be punished by a fine of not less than fifty dollars for a first offence, and not more than one hundred dollars for any subsequent offence. [*Approved March 26, 1918.*

### GENERAL ACTS, CHAPTER 111.

### AN ACT TO AUTHORIZE REGISTERED PHYSICIANS AND SURGEONS TO DISCLOSE INFORMATION PERTAINING TO VENEREAL DISEASES.

*Be it enacted, etc., as follows:*

Any duly registered physician or surgeon who knows or has reason to believe that any person is infected with gonorrhœa or syphilis may disclose such information to any person, or to the parent or guardian of any minor, from whom the infected person has received a promise of marriage. Such information given in good faith by a duly registered physician or surgeon shall not constitute a slander or libel. [*Approved March 27, 1918.*

### GENERAL ACTS, CHAPTER 117.

### AN ACT TO MAKE UNIFORM PHYSICIANS' CERTIFICATES OF EXEMPTION FROM VACCINATION.

*Be it enacted, etc., as follows:*

Section six of chapter forty-four of the Revised Laws, as amended by chapter three hundred and seventy-one of the acts of nineteen hundred and six, and by chapter two hundred and fifteen of the acts of nineteen hundred and seven, is hereby further amended by striking out the words "granted for cause stated therein, signed by a regular practising physician that he is not a fit subject for vaccination", in the fourth and fifth lines, and substituting the following: — the same as the physician's certificate required by the provisions of section one hundred and thirty-nine of chapter seventy-five of the Revised Laws, as amended by section two of chapter one hundred and ninety and by section ten of chapter five hundred and forty-four of the acts of nineteen hundred and two, — so as to read as follows: — *Section 6.* A child who has not been vaccinated shall not be admitted to a public school except upon presentation of a certificate the same as the physician's certificate required by the provisions of section one hundred and thirty-nine of chapter seventy-five of the Revised Laws, as amended by section two of chapter one hundred and ninety and by section ten of chapter five hundred and forty-four of the acts of nineteen hundred and two. A child who is a member of a household in which a person is ill with smallpox, diphtheria, scarlet fever, measles, or any other infectious or contagious disease, or of a household exposed to such contagion from another household as aforesaid, shall not attend any public school during such illness until the teacher of the school has been furnished with a certificate from the board of health of the city or town or from the attending physician of such person, stating that danger of conveying such disease by such child has passed. [*Approved March 27, 1918.*

Revised Laws, chapter 75, section 139, as amended, referred to in this chapter, reads in part as follows: —

. . . and any child who presents a certificate, signed by a registered physician designated by the parent or guardian, that the physician has at the time of giving the certificate personally examined the child and that he is of the opinion that the physical condition of the child is such that his health will be endangered by vaccination . . .

## GENERAL ACTS, CHAPTER 130.

### AN ACT RELATIVE TO THE REPORTING OF DANGEROUS DISEASES BY LOCAL BOARDS OF HEALTH TO THE STATE DEPARTMENT OF HEALTH.

*Be it enacted, etc., as follows:*

SECTION 1. The board of health of every city and town, or in towns not having such a board, the board of selectmen acting as a board of health, shall appoint some person, who may or may not be a member of the board, whose duty it shall be to give notice to the state department of health of diseases dangerous to the public health as provided by section fifty-two of chapter seventy-five of the Revised Laws, as amended by section one of chapter four hundred and eighty of the acts of nineteen hundred and seven and by chapter fifty-five of the General Acts of nineteen hundred and sixteen, and in case of the absence or disability of such appointee the board shall appoint another person to perform said duty during such absence or disability. Such appointments and the acceptance thereof by the persons so appointed shall be placed upon the records of the board. Any person who accepts such an appointment and who wilfully refuses or wilfully neglects or through gross negligence fails to make and send the notices required by said section fifty-two, as amended as aforesaid, in accordance with its terms, shall be punished by a fine not exceeding fifty dollars.

SECTION 2. A claim of a city or town against the commonwealth for reasonable expenses incurred by the board of health of such city or town, or by the board of selectmen acting as such, in making the provision required by law for persons infected with a disease dangerous to the public health shall not be defeated by reason of the failure on the part of its board of health, or by the board of selectmen acting as such, to give notice of such disease to the state department of health in accordance with the provisions of said section fifty-two as amended as aforesaid, if such claim is otherwise a valid claim against the commonwealth. [*Approved April 2, 1918.*

## GENERAL ACTS, CHAPTER 131.

### AN ACT TO REQUIRE THAT DISPENSARIES SHALL BE LICENSED BY THE STATE DEPARTMENT OF HEALTH.

*Be it enacted, etc., as follows:*

SECTION 1. For the purposes of this act a dispensary is defined to be any place or establishment, not conducted for profit, where medical or surgical advice or treatment, medicine or medical apparatus, is furnished to persons non-resident therein; or any place or establishment, whether conducted for charitable purposes or for profit, advertised, announced, conducted or maintained under the name "dispensary" or "clinic", or other designation of like import.

Section 2. It shall be unlawful for any person, firm, association or corporation, other than the regularly constituted authorities of the United States, or of the commonwealth, to establish, conduct, manage or maintain any dispensary, as above defined, within the commonwealth, without first obtaining a license as hereinafter provided.

Section 3. Any person, firm, association or corporation, desiring to conduct a dispensary shall apply in writing for a license to the state department of health. The application shall be in a form prescribed by the said department, and shall be uniform for all schools of medicine. There shall be attached to the application a statement, verified by the oath of the applicant, containing such information as may be required by the said department. If, in the judgment of the said department, the statement filed and other evidence submitted in relation to the application indicate that the operation of the proposed dispensary will be for the public benefit, a license, in such form as the said department shall prescribe, shall be issued to the applicant. Licenses shall expire at the end of the calendar year in which they are issued, but may be renewed annually on application as above provided for their initial issue. No license shall be transferable except with the approval of the said department. For the issue or renewal of each license a fee of five dollars shall be charged, except to incorporated charitable organizations which conduct dispensaries without charge and which report as required by law to the state board of charity. The fee shall be paid into the treasury of the commonwealth.

Section 4. The public health council of the said department shall make rules and regulations, and may revise or change the same, in accordance with which dispensaries shall be licensed and conducted, but no such rule or regulation shall specify any particular school of medicine in accordance with which a dispensary shall be conducted.

Section 5. The commissioner of health, and his authorized agent, shall have authority to visit and inspect any dispensary at any time in order to ascertain whether it is licensed and conducted in compliance with this act and with the rules and regulations established hereunder. After thirty days' notice to a licensed dispensary and opportunity to be heard, the said department may, if in its judgment the public interest so demands, revoke the license of any dispensary.

Section 6. Dispensaries legally incorporated or in operation in this commonwealth at the date of the passage of this act, shall, on application, be permitted to continue in operation for the remainder of the calendar year without fee. The said department is hereby directed to cause an inspection to be made of all such dispensaries prior to the thirty-first day of December in the current year.

Section 7. Any person, firm, association, or corporation advertising, conducting, managing, or maintaining a dispensary as defined in this act, unless the same is duly licensed under this act, and any person, firm, association or corporation wilfully violating any rule or regulation made and published under the authority of this act, shall be guilty of a misdemeanor, and, on conviction thereof, shall be punished by a fine of not less than ten dollars nor more than one hundred dollars. A separate and distinct offence shall be deemed to have been committed on every day during which the violation of any provision of this act continues after due notice of the violation is given in writing by the said department to the authorities of the dispensary concerned. It shall be the duty of the commissioner of health to report to the attorney-general any violation of this act. [*Approved April 2, 1918.*

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken-Pox. |  | 9 Diphtheria. |  | 61A Epi. Cerebrospinal Meningitis. |  | 19B German Measles. |  | 92 Lobar Pneumonia. |  | 6 Measles. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, | 3,920,988 | 490 | **1** | 678 | **54** | 36 | **23** | 1415 | – | 883 | **475** | 3,471 | **48** |
| 2 | Cities over 200,000. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | Boston, | 793,471 | 70 | – | 300 | **27** | 11 | **6** | 90 | – | 292 | **142** | 609 | **7** |
| 4 | Cities, 150,000–200,000. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | Worcester, | 173,419 | 1 | – | 18 | **2** | 4 | **3** | 34 | – | 42 | **27** | 24 | **1** |
| 6 | Cities, 100,000–150,000. | *578,593* | *50* | – | *96* | *6* | *9* | *3* | *80* | – | *147* | *73* | *537* | *14* |
| 7 | Fall River, | 128,317 | 10 | – | 22 | **1** | 2 | **1** | 9 | – | 24 | **7** | 14 | **1** |
| 8 | New Bedford, | 117,855 | 9 | – | 11 | – | 1 | – | 4 | – | 11 | **9** | 98 | **7** |
| 9 | Springfield, | 111,983 | 13 | – | 21 | **4** | 1 | **1** | 35 | – | 49 | **19** | 205 | **2** |
| 10 | Cambridge, | 111,379 | 15 | – | 27 | – | 1 | – | 19 | – | 57 | **19** | 210 | **4** |
| 11 | Lowell, | 109,059 | 3 | – | 15 | **1** | 4 | **1** | 13 | – | 6 | **19** | 10 | – |
| 12 | Cities, 50,000–100,000. | *569,719* | *42* | – | *59* | *5* | *2* | *3* | *88* | – | *152* | *56* | *391* | *7* |
| 13 | Lynn, | 99,952 | 3 | – | 9 | – | – | – | 28 | – | 21 | **4** | 17 | **1** |
| 14 | Lawrence, | 93,062 | 7 | – | 13 | **2** | – | – | 4 | – | 22 | **11** | 59 | – |
| 15 | Somerville, | 93,026 | 1 | – | 14 | **2** | – | – | 4 | – | 25 | **5** | 105 | **1** |
| 16 | Brockton, | 65,746 | 13 | – | 4 | – | – | **1** | 7 | – | 15 | **10** | 22 | **1** |
| 17 | Holyoke, | 62,796 | 1 | – | 7 | – | – | – | 2 | – | 4 | **4** | 23 | – |
| 18 | Haverhill, | 52,873 | 5 | – | 4 | – | – | – | 30 | – | 15 | **4** | 96 | **2** |
| 19 | Malden, | 51,798 | 6 | – | 5 | – | – | – | 6 | – | 7 | **2** | 10 | – |
| 20 | Chelsea, | 50,468 | 6 | – | 3 | **1** | 2 | **2** | 2 | – | 43 | **16** | 59 | **2** |
| 21 | Cities and Towns, 25,000–50,000. | *487,764* | *65* | – | *77* | *5* | *5* | *2* | *360* | – | *60* | *45* | *559* | *4* |
| 22 | Quincy, | 45,827 | 7 | – | 11 | **1** | – | – | 25 | – | 6 | **2** | 179 | – |
| 23 | Newton, | 45,234 | 11 | – | 6 | – | – | – | 90 | – | 8 | **7** | 112 | – |
| 24 | Pittsfield, | 44,410 | 4 | – | 1 | – | 4 | **2** | 46 | – | 4 | **3** | 14 | **1** |
| 25 | Salem, | 41,082 | – | – | 4 | – | – | – | 94 | – | 11 | **9** | 28 | – |
| 26 | Fitchburg, | 40,830 | 1 | – | 5 | – | – | – | 23 | – | 7 | **4** | 21 | – |
| 27 | Everett, | 40,435 | 1 | – | 18 | – | – | – | – | – | 5 | **3** | 31 | – |
| 28 | Taunton, | 37,381 | – | – | 2 | – | – | – | – | – | 4 | **5** | 3 | – |
| 29 | Brookline, | 37,147 | 15 | – | 9 | **2** | – | – | 47 | – | 4 | **3** | 43 | – |
| 30 | Medford, | 35,230 | 3 | – | 7 | **1** | 1 | – | 6 | – | 2 | **3** | 17 | – |
| 31 | Chicopee, | 33,177 | 1 | – | 4 | – | – | – | 1 | – | 4 | **1** | 5 | – |
| 32 | Waltham, | 31,643 | 20 | – | 4 | – | – | – | 5 | – | – | **2** | 18 | **1** |
| 33 | Revere, | 29,643 | – | – | 6 | **1** | – | – | – | – | 4 | **1** | – | **1** |
| 34 | Beverly, | 25,725 | 2 | – | – | – | – | – | 23 | – | 1 | **2** | 88 | **1** |
| 35 | Cities and Towns, 10,000–25,000. | *575,996* | *127* | *1* | *78* | *4* | *2* | *4* | *316* | – | *120* | *62* | *803* | *8* |
| 36 | Gloucester, | 24,529 | 2 | – | 1 | – | – | – | 7 | – | 1 | **3** | 4 | – |
| 37 | Northampton, | 23,081 | 11 | – | 1 | – | – | – | 9 | – | 2 | – | 2 | – |
| 38 | North Adams, | 22,045 | 5 | – | 2 | **1** | – | – | 2 | – | 5 | **2** | 2 | – |
| 39 | Peabody, | 20,489 | – | – | – | – | – | – | 6 | – | 2 | **1** | 13 | – |
| 40 | Attleboro, | 19,933 | 2 | **1** | 1 | – | – | – | 35 | – | 1 | **2** | 9 | – |
| 41 | Westfield, | 19,929 | 9 | – | 1 | – | – | – | 1 | – | 22 | **2** | – | – |
| 42 | Watertown, | 18,851 | 2 | – | 1 | – | – | – | 2 | – | 7 | **1** | 41 | – |
| 43 | Framingham, | 17,728 | 14 | – | 2 | – | – | – | 81 | – | 5 | **4** | 16 | – |
| 44 | Leominster, | 17,688 | – | – | 4 | – | 1 | – | 17 | – | 5 | **5** | 12 | – |
| 45 | Melrose, | 17,627 | 7 | – | 3 | – | – | – | 14 | – | 8 | **3** | 6 | – |
| 46 | Gardner, | 17,451 | 2 | – | 13 | – | – | – | 10 | – | 1 | **1** | 12 | – |
| 47 | Arlington, | 17,264 | 4 | – | 1 | – | – | – | 2 | – | – | **1** | 13 | – |
| 48 | Woburn, | 17,116 | – | – | 2 | – | – | – | 2 | – | – | – | 6 | – |
| 49 | Marlborough, | 15,680 | 2 | – | 6 | **1** | – | – | – | – | 1 | **1** | 412 | **3** |
| 50 | Methuen, | 15,649 | 2 | – | 2 | – | – | – | – | – | 2 | **1** | 1 | – |
| 51 | Newburyport, | 15,542 | 21 | – | – | – | – | – | 2 | – | 4 | **3** | 6 | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary
addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH,[1] FEBRUARY, 1918.

| 38A Ophthalmia Neonatorum. | | 38B Suppurative Conjunctivitis. | | 75A Trachoma. | | 19C Mumps | | 7 Scarlet Fever. | | 28–29 Tuberculosis, Pulmonary. | | 30–35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 38C Gonorrhœa.[2] | | 37 Syphilis.[2] | | 8 Whooping Cough. | | Line No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | |
| 134 | – | 45 | – | 7 | – | 678 | – | 537 | 9 | 683 | 403 | 76 | 68 | 39 | 7 | 47 | – | 16 | 19 | 679 | 41 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 40 | – | 13 | – | 3 | – | 178 | – | 134 | 5 | 225 | 99 | 19 | 14 | 7 | 2 | 24 | – | 9 | 8 | 200 | 10 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 15 | – | 6 | – | – | – | 1 | – | 27 | – | 24 | 11 | 2 | 3 | – | – | – | – | – | 1 | 2 | – | 5 |
| *26* | – | *10* | – | *3* | – | *86* | – | *68* | *1* | *120* | *83* | *18* | *21* | *8* | *1* | *1* | – | *1* | *3* | *84* | *9* | 6 |
| 9 | – | 5 | – | 1 | – | 28 | – | 36 | – | 28 | 15 | 3 | 2 | 5 | – | – | – | – | – | 22 | 1 | 7 |
| 10 | – | 1 | – | – | – | 2 | – | 5 | – | 38 | 20 | 5 | 3 | 3 | 1 | – | – | – | 2 | 6 | 2 | 8 |
| 5 | – | 2 | – | 1 | – | 35 | – | 17 | – | 21 | 14 | 6 | 5 | – | – | – | – | – | 1 | 16 | 1 | 9 |
| 1 | – | 1 | – | 1 | – | 21 | – | 4 | – | 18 | 25 | 3 | 4 | – | – | 1 | – | 1 | – | 38 | 3 | 10 |
| 1 | – | 1 | – | – | – | – | – | 6 | 1 | 15 | 9 | 1 | 7 | – | – | – | – | – | – | 2 | 2 | 11 |
| *21* | – | *5* | – | – | – | *43* | – | *90* | *1* | *86* | *42* | *16* | *9* | *9* | *1* | *5* | – | *1* | *3* | *115* | *7* | 12 |
| 2 | – | – | – | – | – | 2 | – | 21 | – | 13 | 6 | – | – | 1 | – | – | – | – | 2 | 25 | 4 | 13 |
| 2 | – | – | – | – | – | 1 | – | 2 | – | 14 | 12 | 10 | 6 | 5 | – | – | – | – | – | 13 | – | 14 |
| 3 | – | – | – | – | – | 3 | – | 18 | – | 14 | 7 | – | – | – | – | 1 | – | – | – | 9 | 1 | 15 |
| 3 | – | 2 | – | – | – | 22 | – | 19 | – | 11 | 7 | 1 | 1 | 3 | – | – | – | – | 1 | 41 | – | 16 |
| 1 | – | – | – | – | – | 6 | – | 6 | – | 9 | 3 | – | – | – | 1 | – | – | – | – | 9 | 2 | 17 |
| 5 | – | 2 | – | – | – | 6 | – | 13 | 1 | 15 | 1 | 2 | 1 | – | – | – | – | – | – | 7 | – | 18 |
| – | – | – | – | – | – | 3 | – | 6 | – | 3 | 2 | 2 | 1 | – | – | – | – | – | – | 5 | – | 19 |
| 5 | – | 1 | – | – | – | – | – | 5 | – | 7 | 4 | 1 | – | – | – | 4 | – | 1 | – | 6 | – | 20 |
| *7* | – | *1* | – | – | – | *79* | – | *60* | *1* | *72* | *44* | *10* | *10* | *4* | *2* | *13* | – | *4* | *2* | *62* | *2* | 21 |
| – | – | – | – | – | – | 1 | – | 9 | – | 4 | 5 | 1 | 1 | – | – | – | – | – | 1 | 4 | – | 22 |
| – | – | – | – | – | – | 16 | – | 2 | 1 | 4 | 3 | 2 | 1 | – | – | 2 | – | – | – | 17 | – | 23 |
| 1 | – | – | – | – | – | 2 | – | 5 | – | 7 | 2 | 2 | 3 | – | – | – | – | – | – | 3 | – | 24 |
| 1 | – | – | – | – | – | 4 | – | 2 | – | 5 | 9 | 1 | 1 | 1 | – | 1 | – | – | – | – | – | 25 |
| 1 | – | – | – | – | – | 34 | – | 1 | – | 5 | 4 | 1 | 1 | 2 | 1 | – | – | – | – | 8 | 1 | 26 |
| 1 | – | 1 | – | – | – | – | – | 3 | – | 8 | 2 | 1 | – | 1 | 1 | 1 | – | – | – | 8 | – | 27 |
| – | – | – | – | – | – | 13 | – | 5 | – | 20 | 7 | 2 | 3 | – | – | – | – | – | 1 | – | – | 28 |
| – | – | – | – | – | – | 2 | – | 8 | – | 4 | 3 | – | – | – | – | – | – | – | – | 13 | – | 29 |
| – | – | – | – | – | – | 1 | – | 7 | – | 3 | 2 | – | – | – | – | 1 | – | – | – | 4 | – | 30 |
| 1 | – | – | – | – | – | 2 | – | – | – | 6 | 2 | – | – | – | – | – | – | – | – | 5 | 1 | 31 |
| 1 | – | – | – | – | – | 3 | – | 4 | – | 2 | 4 | – | – | – | – | 3 | – | 2 | – | – | – | 32 |
| – | – | – | – | – | – | – | – | 9 | – | 4 | – | – | – | – | – | 5 | – | 2 | – | – | – | 33 |
| 1 | – | – | – | – | – | 1 | – | 5 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | 34 |
| *14* | – | *6* | – | *1* | – | *161* | – | *68* | – | *79* | *42* | *8* | *8* | *3* | – | *2* | – | *1* | *1* | *115* | *10* | 35 |
| – | – | – | – | – | – | – | – | – | – | 3 | 2 | 2 | – | – | – | – | – | – | – | – | – | 36 |
| – | – | – | – | – | – | 1 | – | 8 | – | 7 | 4 | 1 | 2 | – | – | – | – | – | – | – | – | 37 |
| – | – | – | – | – | – | 1 | – | – | – | 4 | 1 | – | – | 1 | – | – | – | – | – | 6 | – | 38 |
| – | – | 1 | – | – | – | 4 | – | 1 | – | 3 | 2 | – | – | – | – | – | – | – | – | – | – | 39 |
| – | – | – | – | – | – | 1 | – | – | – | 3 | 1 | 1 | – | – | – | – | – | – | – | 2 | – | 40 |
| 1 | – | – | – | – | – | 1 | – | 15 | – | 4 | 6 | – | – | – | – | – | – | – | – | 4 | – | 41 |
| – | – | – | – | – | – | 1 | – | 2 | – | 4 | – | – | – | – | – | – | – | – | – | 1 | – | 42 |
| – | – | – | – | – | – | 2 | – | 1 | – | 2 | – | – | – | – | – | – | – | – | – | – | – | 43 |
| – | – | – | – | – | – | – | – | 1 | – | 7 | 3 | 2 | – | – | – | – | – | – | – | 4 | – | 44 |
| 1 | – | 1 | – | – | – | 1 | – | 4 | – | 1 | 1 | – | – | – | – | 1 | – | – | – | 3 | – | 45 |
| 1 | – | – | – | – | – | – | – | 1 | – | 5 | 2 | – | 1 | – | – | – | – | – | – | 30 | – | 46 |
| 1 | – | – | – | – | – | 2 | – | 1 | – | 4 | – | – | 2 | – | – | – | – | – | – | – | – | 47 |
| 1 | – | – | – | – | – | – | – | – | – | 2 | 3 | – | – | – | – | – | – | – | – | 2 | – | 48 |
| – | – | – | – | – | – | – | – | 3 | – | – | – | – | 1 | – | – | – | – | – | 1 | – | – | 49 |
| – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | 1 | 50 |
| 1 | – | 4 | – | – | – | 48 | – | 1 | – | 1 | 2 | 1 | – | – | – | – | – | – | – | 6 | – | 51 |

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of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them for

[2] Gonorrhœa and syphilis were made reportable to the State Department of Health, Feb. 1, 1918.

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | CITIES AND TOWNS GROUPED IN ORDER OF POPULATION. | Population estimated as of July 1, 1918. | 19A Chicken Pox. |  | 9 Diphtheria. |  | 61A Epi. Cerebrospinal Meningitis. |  | 19B German Measles. |  | 92 Lobar Pneumonia. |  | 6 Measles. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 15,255 | – | – | 2 | – | – | – | – | – | – | – | 10 | – |
| 53 | Weymouth, | 14,659 | – | – | 3 | – | – | – | – | – | 8 | 5 | – | – |
| 54 | Winthrop, | 14,443 | – | – | 2 | – | – | – | 5 | – | 14 | – | 8 | – |
| 55 | Milford, | 14,088 | – | – | 2 | – | – | 1 | 2 | – | – | 2 | 8 | – |
| 56 | Greenfield, | 14,028 | 8 | – | – | – | – | 1 | 8 | – | 2 | 2 | – | – |
| 57 | Wakefield, | 13,664 | 1 | – | 2 | – | – | – | 11 | – | – | 1 | 7 | – |
| 58 | Plymouth, | 13,430 | 3 | – | 11 | 1 | – | 1 | 16 | – | – | 1 | 8 | – |
| 59 | Adams, | 13,340 | 1 | – | – | – | – | – | – | – | – | 1 | – | – |
| 60 | Clinton, | 13,266 | – | – | – | – | – | – | 1 | – | 1 | – | 8 | – |
| 61 | Webster, | 13,242 | – | – | 4 | – | – | – | – | – | – | 1 | – | – |
| 62 | Norwood, | 12,879 | 7 | – | – | – | – | – | 6 | – | – | 1 | – | – |
| 63 | West Springfield, | 12,696 | 3 | – | 2 | – | – | – | 1 | – | – | 1 | – | – |
| 64 | Danvers, | 12,309 | – | – | 1 | – | – | – | 56 | – | 9 | 3 | 2 | – |
| 65 | Dedham, | 12,172 | – | – | 3 | 1 | – | – | 2 | – | 3 | – | – | – |
| 66 | Natick, | 11,924 | 2 | – | – | – | – | – | 1 | – | 5 | 4 | 40 | – |
| 67 | Saugus, | 11,625 | – | – | – | – | – | – | – | – | – | – | – | 1 |
| 68 | Easthampton, | 10,692 | 1 | – | 1 | – | 1 | 1 | – | – | 6 | 3 | 1 | – |
| 69 | Athol, | 10,582 | – | – | 1 | – | – | – | 1 | – | – | – | 2 | – |
| 70 | Bridgewater, | 10,468 | – | – | 2 | – | – | – | 11 | – | 1 | 4 | – | – |
| 71 | Winchester, | 10,451 | 17 | – | 1 | – | – | – | 5 | – | 2 | – | 110 | 4 |
| 72 | Braintree, | 10,162 | 1 | – | – | – | – | – | – | – | 3 | 3 | 44 | – |
| 73 | Palmer, | 10,019 | – | – | 1 | – | – | – | – | – | – | – | – | – |
| 74 | TOWNS, 5,000–10,000. | *346,607* | *30* | – | *23* | *1* | – | *1* | *226* | – | *48* | *36* | *245* | *2* |
| 75 | TOWNS, 2,500–5,000. | *182,889* | *24* | – | *11* | *3* | *1* | – | *93* | – | *6* | *13* | *35* | – |
| 76 | TOWNS UNDER 2,500. | *212,530* | *61* | – | *8* | – | *2* | *1* | *133* | – | *12* | *19* | *208* | *1* |
| 77 | STATE INFIRMARY, |  | *19* | – | *7* | – | – | – | – | – | – | – | *1* | – |
| 78 | Camp Devens, |  | *1* | – | *1* | *1* | – | – | – | – | *4* | *2* | *59* | *4* |

In addition to the above there occurred 3 cases of anterior poliomyelitis, 1 in Dracut, 1 in Haverhill and 1 in Woburn; 4 cases of dog bite, 1 in Attleboro, 1 in Berkley, 1 in Brockton and 1 in Worcester; of septic sore throat, 2 in Brookline, 3 in Boston, 1 in Chicopee, 2 in Fall River, 1 in Foxborough, 1 in smallpox, 1 in Lowell and 1 in Marlborough; 5 cases of trichinosis in Brockton; 1 case of typhus fever in

## TO THE PUBLIC HEALTH — Concluded.

| 38A Ophthalmia Neonatorum. | | 38B Suppurative Conjunctivitis. | | 75A Trachoma. | | 19C Mumps. | | 7 Scarlet Fever. | | 28–29 Tuberculosis, Pulmonary. | | 30–35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 38C Gonorrhœa. | | 37 Syphilis. | | 8 Whooping Cough. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| – | – | – | – | – | – | – | – | – | – | 3 | 2 | – | – | – | – | – | – | – | – | – | – | 52 |
| 2 | – | – | – | – | – | – | – | 1 | – | 3 | – | – | – | – | – | 1 | – | 1 | – | – | – | 53 |
| 1 | – | – | – | – | – | 3 | – | 2 | – | 2 | – | – | – | – | – | – | – | – | – | 5 | 1 | 54 |
| – | – | – | – | – | – | – | – | 1 | – | 3 | – | – | – | – | – | – | – | – | – | 8 | – | 55 |
| 3 | – | – | – | – | – | 63 | – | 5 | – | – | – | – | – | – | – | – | – | – | – | 11 | 1 | 56 |
| – | – | – | – | – | – | – | – | 2 | – | 1 | 3 | – | 1 | – | – | – | – | – | – | – | – | 57 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 1 | – | – | – | – | – | – | – | 58 |
| – | – | – | – | – | – | – | – | – | – | 3 | 1 | – | – | – | – | – | – | – | – | 6 | 1 | 59 |
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| *2* | – | – | – | – | – | *44* | – | *25* | – | *11* | *29* | – | *1* | *3* | *1* | – | – | – | – | *30* | *1* | 76 |
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and 1 in Somerville, with 1 death in Boston; 5 cases of anthrax, 1 in Lawrence, 2 in Lowell, 1 in Salem 2 cases of dysentery in North Adams and 1 death in Chicopee; 1 case of malaria in Cambridge; 12 cases Gloucester, 1 in Haverhill and 1 in Monson, with 2 deaths, 1 in Brewster and 1 in Gloucester; 2 cases of Chelsea.

# LABORATORY AIDS FOR DIAGNOSIS AND TREATMENT OF COMMUNICABLE DISEASES.

The State Department of Health maintains, as a part of its regular work, bacteriological and biological laboratories to aid in the control and prevention of communicable diseases. The facilities of these laboratories and certain supplies furnished by them are available to physicians for the free use of residents of the Commonwealth. Upon requisition these supplies are sent to local boards of health, from whom physicians may obtain them as required.

The following supplies are available: —

Diphtheria antitoxin, 4 sizes: 1,000, 3,000, 6,000 and 12,000 units.
Antityphoid vaccine (3 ampoules in each set).
Triple vaccine, to secure immunity against typhoid, paratyphoid A and paratyphoid B.
Smallpox vaccine.
Antimeningitis serum.
Antirabic treatment (secured by special arrangement in each case through District Health Officers).
Outfits for diphtheria cultures.
Outfits for Widal tests (typhoid fever).
Outfits for culture tests (typhoid fever).
Schick tests for determining diphtheria immunity, and toxin-antitoxin mixture for producing active immunization against diphtheria (both of these products on application to State District Health Officers).
Outfits for prevention of ophthalmia (silver nitrate in wax ampoules).
Outfits for sputum.

The following examinations are made for diagnosis at the laboratories, the specimens being sent to the laboratories by the physicians in attendance: —

At Bacteriological Laboratory, Room 527, State House: —

Culture test for typhoid, blood (of value only in first five days).
Widal test for typhoid, blood (rarely positive before fifth day).
Culture test for typhoid, stools, urine (probable carrier cases chiefly).
Sputum for tubercle bacilli (consumption).
Pus smears for gonococci.
Blood smears for malaria.
Throat and nose cultures for diphtheria.

At Wassermann Laboratory, Harvard Medical School, Longwood Avenue, Boston, Wassermann test for syphilis: —

Specimens are received in Wassermann Laboratory when submitted by direction of the District Health Officers or local boards of health. Samples of blood are taken at the laboratory on Tuesdays and Thursdays from 3 to 5 P.M. There is no charge for this class of work.

In addition to the above work examinations are made for rabies, glanders and anthrax for the Department of Animal Industry. Specimens to receive attention must be submitted through direction of the Department of Animal Industry.

Aside from the above facilities having to do with communicable diseases, examinations of pathological tissues for diagnosis of cancer, etc., will be made at the Laboratory of the Harvard Cancer Commission, Harvard Medical School, Longwood Avenue, Boston.

(Containers and instructions for submitting specimens may be obtained from the District Health Officers or directly from the Department at the State House.)

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner, EUGENE R. KELLEY, M.D.

| | |
|---|---|
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| The Connecticut Valley District, . . | ——— ——— |
| The Berkshire District, . . . . | HOWARD A. STREETER, M.D., Pittsfield. |

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[1] Leave of absence, military service.

# PUBLIC HEALTH BULLETIN

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BY THE
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OF MASSACHUSETTS

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Vol. 5, No. 5

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EUGENE R. KELLEY, M.D., *Commissioner*

*The Common Health of the Commonwealth*

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Publication of this Document
approved by the
Supervisor of Administration.

## FATS AND THEIR VALUE IN THE DIET.

FAT, a term which includes the edible oils as well as fat, is available in many forms with a large range of prices. Olive oil, cotton seed oil, lard, crisco, etc., which we use as a shortening and as a medium in which to cook other foods, are pure fats, but many other fats contain water, mineral matter and a varying amount of protein. Even butter is only 84 per cent. fat, the rest being water, protein (curd from milk) and mineral matter.

The importance of fat in the diet cannot be overestimated. It does not build up muscular tissues but yields heat and energy. It is almost a pure fuel, furnishing the body with two and one-fourth times as much energy as an equal amount of carbohydrate foods, and in fact yielding weight for weight more energy than any other food.

Fat is not only of value as an energy-yielding food but has special dietetic value as a flavor food, making other foods more appetizing and palatable. It also exerts a good influence on the digestive processes by stimulating the flow of the bile and the pancreatic juices. This helps in the digestion of the other foods and in the elimination of waste products.

Although the carbohydrates also furnish heat and energy to the body they cannot entirely replace the fat, and a diet deficient in fat is inadequate, weakens the resistance of the body and endangers the health of the individual. Sufficient fat is especially necessary in the diet of children and young people, and is most useful as a source of energy when carbohydrate foods must be limited, as in cases of diabetes.

The amount of fat required daily varies with the climate, the individual and the occupation. Thus people living in cold climates generally consume larger amounts of fat than those living in warm countries. This, however, may be partly due to the fact that cereals and vegetables cannot be grown to any great extent in very cold climates. People doing severe muscular work eat more fat than those leading a sedentary life; they require extra fuel, which can be furnished in concentrated form by the fats.

Some people because of personal peculiarities are unable to relish much fat, but statistics show that the average amount of pure fat consumed daily by the ordinary individual varies from one and one-half to four and one-half ounces, which is equal to from three to seven tablespoons, respectively, or from three to seven small servings of butter. This, together with the other fats eaten daily in the various foods, is generally more than sufficient for the ordinary individual.

Fat is found in varying amounts in all animal foods. The amount in meat differs with the kind of animal and the part of the body from which it is taken. For example, pork, duck and goose are rich in fat, while it is almost entirely absent in breast of chicken and fillet of beef.

In fish, the percentage of fat ranges from .4 per cent. in cod to 12.8 per cent. in salmon. Generally speaking, the white fish are the lean fish and the dark fish the fat fish.

The percentage of fat in the cereals and grains is greatest in those growing in cold climates, and varies from 7.3 per cent. in oats to .5 per cent. in rice. Corn ranks next to oats in the percentage of fat, containing 4.6 per cent. Mazola oil, one of our commercial products, is made from corn.

The fruits and vegetables, with the exception of the olive, are almost wholly lacking in fat. But this deficiency is overcome when we add butter to the vegetables and cream or salad dressing to fruits. Some of our vegetables, like the onion, contain a volatile oil. While this has no actual food value, it is of great value as a flavor. It is this pungent oil which is so irritating to the eyes and makes onions so disagreeable to peel. The discomfort thus caused can be somewhat overcome by peeling the onions under water.

Nuts are one of our most valuable sources of fat and one which should be utilized at this time. The amount ranges from 4.5 per cent. in chestnuts to 57.4 per cent. in cocoanuts. We have peanut butter and peanut oil from peanuts, nut margarine and cocoanut oil from cocoanuts, and many other nut butters made by grinding nuts rich in oil to a paste. The nut butters are not only rich in fat, but also contain a good amount of protein.

Cream, the fat of milk, and butter which is made from cream are the fats provided by nature for the young and are therefore the best fats for children, especially young children. They are not only the easiest to digest and the most completely absorbed, but contain the necessary growth-promoting substances which are essential in the food for the child, and if other fats are substituted in the diet of the child whole milk must be freely used.

All pure fats yield practically the same amount of energy when burned outside the body, but since there is a difference in their digestibility and absorption the energy obtained by the body varies with this difference, and this seems to correspond with the difference in their melting point.

Thus, liquid oils, like olive oil, emulsified fats, like cream and fat in egg yolk, and fats with a low melting point, like butter, are the quickest and easiest to digest.

The digestion of fats depends also upon the manner in which they are served and the care exercised in the cooking. All the fats are quite completely digested if taken in right amounts, in correct combinations and properly cooked, but they can be made very indigestible by improper cooking, or if served in wrong combinations.

If a fat is heated to a high temperature it splits up into indigestible fats and fatty acids, which are very irritating to the delicate lining of the stomach and intestines, often causing indigestion. Great care should always be taken to keep fat from burning when cooking foods rich in fat, like bacon or pork. Bacon, if properly cooked, is one of our most easily digested fats, but bacon which is burned on the outside and only partially cooked on the inside is most indigestible and unpalatable.

Very little digestion of fat takes place in the stomach; the gastric lipase is probably strong enough to take care of the liquid or emulsified fats only. Foods rich in fat, like over-rich puddings and salads, food that is carelessly cooked in fat, so that a large amount is absorbed and a waterproof coating formed around the food, and very fat meats, like pork, often cause indigestion because the fat surrounds the protein and carbohydrate in these foods in such a manner that they cannot be reached by the digestive juices until they have been mechanically separated from the fat. The gastric digestion is then retarded, the food remains a longer time in the stomach, and uncomfortable sensations and indigestion result.

Fat is a more costly source of energy than the carbohydrates, butter, cream and bacon being the most expensive; but economy can be practiced by using the less expensive fats for cooking purposes and in allowing no fat to go to waste.

Many housekeepers are extravagant and very wasteful in their use of fat. They throw away drippings and fat scraps, without the thought that these drops saved daily will soon form a pound. They pride themselves on using butter in cooking instead of being proud to use a substitute. Do you waste fat in any of the following ways: —

1. By failing to get from the butcher all the trimmings for which you have paid. The butcher does not waste these, they are saved and sold again for soap. Much good food fat from beef and chicken is wasted in this way.

2. By failing to cook fat which is to be served with meat until it is so crisp and appetizing that it will not be wasted on the plate.

3. By failing to trim excess fat from the meat before it is cooked, and trying it out separately. Do not serve more fat with the meat than will be eaten.

4. By failing to keep the fat from burning during cooking. If burned it will be unappetizing and indigestible.

5. By failing to cook bacon in the oven instead of in a pan over the flame. If cooked in the oven the fat is more thoroughly tried out, it needs less care and there is less odor and smoke in the kitchen.

6. By failing to serve only as much butter at a meal as will be eaten.

7. By failing to use some butter substitute in place of butter in cooking.

8. By failing to use top milk, condensed milk or evaporated milk in place of cream whenever possible, especially in coffee and tea.

9. By failing to buy olive oil or its substitutes in large quantities, — a small bottle is expensive.

10. By failing to make soap from the fats that cannot be utilized any longer for cooking purposes or as a food.

Some people hesitate to use oleomargarine and butter substitutes because they do not realize that they are healthful and nutritious and are much better than a poor grade of butter.

## Oleomargarine.

Oleomargarine or butterine is made by churning together with milk a combination of vegetable and animal fats similar in properties to natural butter. The fats most often used are soft beef fats, neutral lard, cottonseed oil, cocoanut fat and peanut oil. (Neutral lard is lard that has been purified and freed from animal flavors.) These fats are mixed with varying amounts of butter, according to the grade of oleomargarine, to give the butter flavor. In high-grade oleomargarine a large amount of butter is mixed with the artificial product, so that it has a most agreeable taste and flavor very similar to that of butter, but the lack of the fine flavor of butter in the cheaper grade of oleomargarine is not noticeable when it is used for cooking purposes. Oleomargarine, at a lower cost than butter, has the same calorific value and should be more largely used.

## Renovated or Process Butter.

Poor or rancid butter is melted in large tanks, the salts and impurities which settle to the bottom are drawn off, objectionable odors and flavors are removed, and it is then mixed with whole milk and churned again. This, too, is better than an inferior grade of butter, and wholesome.

## COOKING BUTTER.

This is butter that is not as fresh as table butter and can be bought at a lower price. If at all rancid, it should be renovated before using by washing it thoroughly in several cold waters. If this is not sufficient, add to each pound of butter from one-fourth to one teaspoon of baking soda, and melt slowly until a froth rises and the sputtering ceases. Skim and pour carefully from dregs. If not to be used at once, add to each pound one and one-half teaspoons of salt. Use one-third less of this butter than ordinary butter in cooking.

## BEEF SUET SUBSTITUTE.

Cut beef suet in small pieces and cover with water; let it soak for a day, changing the water once. Drain and put in a kettle with one-half cup of skim milk for every pound of suet. Let it cook very slowly until boiling has entirely ceased. When partially cooled, pour off carefully. This fat has no objectionable flavor, and can be well substituted for butter in cooking. To make a softer fat add one pound of lard to five pounds of suet.

## BEEF SUET–PORK–BUTTER.

Cover two pounds of beef suet, cut in small pieces, with water and cook in a double boiler until all the fat is extracted. Strain into a kettle of hot water and let stand until fat is cool and solid. Treat two pounds of pork fat in the same way. Melt equal amounts of butter until it is like oil. Remove pork fat and beef fat from water, add to strained butter and melt slowly together. After the fats are well blended, boil up together and skim. Pour into tin or earthen jars, and keep in a cool, dry place. This fat will have the flavor of butter, is cheaper and has the same food value.

## EXTRACTION OF FATS.

Fats are tried out or rendered to free them from connective tissues or impurities. Suet and scraps must be tried out and then clarified, while fat from soup or drippings needs only to be clarified.

## TO TRY OUT FAT.

Cut fat in small pieces and put in double boiler or in a pan in the oven and cook slowly several hours. When fat is melted, strain it through cheese cloth, pressing to obtain all the fat. The scraps left may be used in steamed puddings. To lessen any undesirable flavors of rendered fats, add equal amounts of water or one cup of milk to two pounds of fat, heat slowly and boil one hour. Cool, allow fat to harden in a cake on top, and remove carefully. Heat fat again slowly to drive off any water. If color and flavor are not satisfactory the process may be repeated several times.

### To clarify Fat.

Heat fat slowly with slices of raw potato, cook until potato is brown, and strain through cheese cloth. Some of the impurities will collect on potato, and the rest will settle to the bottom.

### Flavoring Drippings.

The flavor of drippings, such as mutton, ham, etc., can be greatly changed by heating them slowly with a whole onion or sweet herbs, such as thyme, parsley, bay leaf, etc. These drippings can then be used satisfactorily in made-over dishes or soups.

### Care of Fat in Home.

Fats of all kinds unless properly stored become soft and rancid. They should be kept covered in a cold, dry place. Fats keep longer if left unbroken. For this reason it is best to strain the clarified fats into several small jars instead of one large jar, so that a small portion may be used without disturbing the rest.

Fat that cannot longer be utilized as a food or in cooking should be made into soap.

#### *Soap.*

5 pounds melted clarified fat.
1 pound lye.
1 quart cold water.

½ cup cold water.
3 tablespoons borax.
¼ cup ammonia.
1 teaspoon salt.

Dissolve lye in cold water and let it stand until cool, then add melted fat slowly, stirring constantly. Mix other ingredients together and add to first mixture. Stir until thick and lemon colored. Pour in a pan lined with paper, mark into squares, and let harden. When firm, break apart and pile so that the air will circulate around it freely to dry it. Allow the pieces to stand at least four weeks before using.

This recipe will make twenty-one bars of soap at a cost of less than 15 cents.

Note. — Do not use an aluminum or enamel kettle which has some of the enamel loosened. Use large kettle; water will boil up vigorously when added to lye.

## AN EXPERIENCE WITH THE SCHICK TEST AND TOXIN-ANTITOXIN MIXTURE IN AN INDUSTRIAL SCHOOL.

---

THE possibilities of the Schick test as a guide in the administration of toxin-antitoxin, to secure active immunization against diphtheria in an institution where the inmates are under control, are shown by Dr. Thomas E. Lilly of the State Industrial School for Boys at Shirley, Mass., in the following summary: —

In June, 1915, there occurred an outbreak of diphtheria at the State Industrial School for Boys in Shirley, Mass. The usual method of taking cultures of the inmates of the infected cottages, quarantine of all persons having positive throats and passive immunization of the inhabitants of the school proved successful for a time, but did not permanently eradicate the disease, as the occasional appearance of new cases of a mild type showed.

The lack of modern hospital facilities and the intimate relation of the inmates of the school made the establishment of an effective quarantine very difficult. The taking of mass cultures was practiced to such an extent that within a year more than 10,000 combined nose and throat cultures had been taken, and antitoxin was administered to the 250 inmates at monthly intervals.

In spite of the strictest quarantine obtainable, and the above mentioned prophylactic measures, there were occasional clinical cases, and carriers were constantly present in the school. An interesting feature noted in connection with this condition was that a great many cases which were diagnosed bacteriologically as positive, proved negative by virulence test. Whether these were cases of "Hoffman bacillus" or an attenuated non-virulent Klebs-Loeffler bacillus is an interesting question. The fact, however, that so many of this type were found among patients who had been chronic carriers not only indicated that the latter conclusion was correct, but made the matter of the continued taking of cultures questionable.

It was suggested by officials of the State Department of Health that by communicating with the New York City Department of Health it might be possible to obtain toxin-antitoxin for active immunization. The New York City Health Department very kindly agreed to furnish the required material upon condition that it would be administered only to boys having positive Schick reaction. The Schick test, it may be explained, is obtained by injecting between the layers of the skin one-fiftieth of the minimum lethal dose of diphtheria toxin for a 250-gram guinea pig. If the person injected has no natural or acquired antitoxin in his tissues there appears in from twenty-four to forty-eight hours a small, sharply circumscribed area of redness which persists for from seven to ten days, leaving a pigmented area or brown spot which in some cases remains indefinitely and usually desquamates in small scales, and in all cases persists in proportion to the severity of the reaction.

In some cases, most often among natural immunes and among those who have been immunized with toxin-antitoxin, a reaction occurs which is known as a pseudoreaction. This reaction is more pronounced, appears earlier, and is more diffuse and darker in color than the true reaction. The pseudoreaction consists of a dusky red spot larger than the true reaction and surrounded by a secondary areola which is not sharply circumscribed, but fades into surrounding normal skin and usually disappears in from forty-eight to seventy-two hours, seldom leaving pigmentation or scaling.

Both true and pseudoreactions ofttimes occur in the same individual, the diagnosis being made by the persistence of the true reaction and the resulting pigmentation and desquamation.

The technique of the Schick test is described by the Massachusetts State Department of Health as follows: —

> It is all important that the test be made properly. Inject one-tenth cubic centimeter of the diluted toxin (representing one-fiftieth of the minimum lethal dose for a 250-gram guinea pig) intracutaneously, not subcutaneously.
>
> A definite wheal-like elvation in the skin, and movable with it, shows that the injection was properly made. A good 1 cubic centimeter syringe with a fine needle is essential.
>
> After a little practice the test can be quickly given to a large number of persons. It is absolutely harmless and gives no constitutional reaction whatsoever.

Dr. Lilly finds that in his experiences the Schick test not only gives a means of distinguishing immune from susceptible persons, but it enables one to predict with reasonable certainty the comparative severity of a case of diphtheria in different susceptible persons; for example, a person having a mild Schick reaction will usually have a mild type of diphtheria if infected.

To comply with the wishes of Dr. Abraham Zingher of the New York City Health Department the Schick test was given to all our inmates with the following results: number of tests given, 257; positive, 148; negative, 109. The ages of patients ranged from fifteen to twenty-one years. The susceptible ones were then given three doses each of 1 cubic centimeter of toxin-antitoxin at intervals of seven days.

In only about 33 per cent. of those injected was there any general reaction and in a much smaller number some slight local reaction. The constitutional symptoms varied all the way from a slight malaise to fever (100° to 103° F.), frontal headache, muscular pains and nausea with vomiting. In the most severe cases all disagreeable symptoms appeared in about eighteen hours and had disappeared before the expiration of forty-eight hours.

The general disturbance was much less after the second dose and almost nil after the final injection. Two months later all the boys given the toxin-antitoxin were given a second Schick test. Out of the 98, 28 showed a slight reaction after seventy-two hours and 13 showed a very slight pigmentation at the end of one week. Three months after the immunization 94 of the boys who were positive when given the first dose were again given the Schick test.

The reason for not giving the Schick test to the whole number of positive cases at this time was because in the meantime several of the boys had been released on parole from the School. At the end of seventy-two hours only 6 showed a slight reaction, and at the end of one week 6 showed a slight pigmentation at the site of injection. Seventy-two gave a pseudoreaction which disappeared after the first seventy-two hours and left no pigmentation.

Two boys became ill with diphtheria after receiving two injections of the toxin-antitoxin, and before receiving the third. One boy contracted diphtheria the day following his last injection. These cases were treated with ordinary diphtheria antitoxin and recovered promptly.

At various times since the active immunization patients have reported with sore throats, having tonsillar exudates, who were positive upon bacteriological examination. These cases, given the Schick test, were found to be negative and recovered without the use of antitoxin. In these cases, while they were strictly quarantined, a diagnosis was made of follicular tonsillitis in diphtheria carriers.

In the institution every new inmate is given the Schick test and classified as "immune" or "susceptible," and, if proven susceptible, receives immunization by toxin-antitoxin. By practicing this method for the past two years, diphtheria has been completely eliminated from the school.

## OPINION OF THE COMMISSIONER OF HEALTH AS TO PERSONS WHO MAY BE ENTITLED TO CERTAIN INFORMATION REGARDING VENEREAL DISEASES.

Chapter 96, Acts of 1918, "An Act relative to reports and records of venereal diseases," provides in section 1 that certain records "shall not be divulged except upon proper judicial order or to a person whose official duties, in the opinion of the Commissioner of Health, entitle him to receive information contained therein."

In the opinion of the Commissioner of Health, the following persons and institutions are entitled to receive the information referred to: physicians, laboratories, dispensaries and hospitals to whom, or by whom, a patient is referred for diagnosis or for treatment, and such employees of the said physicians, laboratories, dispensaries and hospitals, and such officials as must be informed in order to efficiently supervise, care for or treat cases of venereal disease.

(This chapter was printed in full in the Public Health Bulletin for April, page 105.)

## ADDITIONAL VENEREAL REGULATION.

At a meeting of the Public Health Council held May 21, 1918, the following regulation was adopted as an addition to the "Regulations governing the Reporting of Gonorrhea and Syphilis," viz.: —

Regulation 9. Whenever, in the opinion of the physician reporting the case, because of circumstances or conditions present, the protection of the public health demands immediate action by the local board of health, he shall forthwith report the facts as prescribed in Regulation 7 to the State Department of Health, which shall, in turn, proceed as prescribed in Regulation 8.

## REPORT OF DIVISION OF FOOD AND DRUGS.

During the month of April, 1918, samples were collected in 57 cities and towns.

There were 837 samples of milk examined, of which 200 were below the legal standard, 7 samples were skimmed milk not properly labeled, and 56 samples contained added water.

There were 130 samples of food examined, of which the following were adulterated: 1 sample of corn meal containing ground corncobs, 3 samples of cream below the legal standard, 9 samples of decomposed beef, 2 samples of Hamburg steak, containing a compound of sulphurous acid, and not so labeled, 2 samples of sausage, one containing starch in excess of 2 per cent., and the other containing coloring matter, 6 samples of olive oil containing foreign oil, 1 sample of syrup containing a blue color, and 2 samples of vinegar low in acid.

There were 25 drugs examined, of which the following were adulterated: 1 sample of camphorated oil and 2 samples of spirit of nitrous ether deficient in the active ingredient.

The police departments submitted 7 samples of poisons and 8 samples of liquor for examination.

There were 31 convictions for violation of the laws, $1,615 in fines being imposed. Warren Proctor of Lunenburg, Thomas Carey, on two counts, and Charles Nairn, both of Rockland, Joaquin Pimentel of Dartmouth, Valere Langlois and Richard Dugdale of Fairhaven, Lewis A. Taft of Blackstone, Wm. T. Hanscom of Stow, Israel Domey of Weathersfield, Vt., and Nellie Schroot of Newton were convicted for violation of the milk laws. Richard Dugdale of Fairhaven and Nellie Schroot of Newton appealed their cases. Samuel Nicholas of Lynn, Antonio Iannuccillo, on two counts, Sebastian D'amico, on three counts, Guiseppe Spampinato, Charles Campione, Guseppi Pellegrino, Salvatore Struto, Rossario Ferrochioag and Frank Guffaida, all of Lawrence, and Constantine Spiropoulos of Boston were convicted for violation of the food laws. Antonio Iannuccillo and Sebastian D'amico of Lawrence appealed their cases. Oscar Messier of Lawrence was convicted for violation of the drug laws. Husrof Bagdigian and Samuel Ogintz, both of Charlestown, and Iakas Mosigian of Boston were convicted for violation of the cold-storage laws. Messrs. Bagdigian and Ogintz appealed their cases. Herman M. Penn of Greenfield, on two counts, was convicted for violation of the slaughtering laws.

There were 6 confiscations made: consisting of 935 pounds of decomposed hogs' kidneys, 100 pounds of decomposed hogs' livers, 5 pounds of tuberculous lungs, 72 pounds of immature calf, and 375 pounds of tuberculous beef.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

Three samples of milk containing added water, produced by Richard Dugdale of Fairhaven; 1 sample of milk containing added water, produced by Daniel Barberian of Andover; 2 samples of milk containing added water, produced by N. P. Torosian of Milford; 2 samples of milk containing added water, produced by Abram L. Rathbone of Quidnic, R. I.; 2 samples of milk containing added water, produced by John P. Silvia of Quidnic, R. I.; 4 samples of milk containing added water, produced by John Hicks of Quidnic, R. I.; 2 samples of milk containing added water, produced by Wm. A. Lawrence of Portsmouth, R. I.; 5 samples of milk containing added water, produced by Anthony Hatch of Cliftondale; 10 samples of milk containing added water, produced by Thomas Wrenn of Norwood; 1 sample of skimmed milk not properly labeled, produced by T. C. Chase of Taunton; 3 samples of milk containing added water, produced by Joseph W. Nolin of Dracut; 9 samples of decomposed beef, from Nathan Cohen of Boston; 1 sample of vinegar low in acid, from E. O. Smith of Springfield. The following brands of olive oil were adulterated by the addition of foreign oil: Garra & Trusso Extra No. 1 brand, Kilkis brand, Lucchesina brand, De Angelo brand, Termini Imerese brand, Marca Depositata brand, and Berio brand.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of March, 1918: 398,586 dozens of case eggs, 86,726 pounds of broken-out eggs, 1,796,715 pounds of butter, 999,950 pounds of poultry, 4,812 pounds of game, 10,327,867 pounds of fresh meat and fresh meat products, and 4,071,101 pounds of fresh food fish, making a total of 17,685,757 pounds.

There was on hand in storage on April 1, 1918, 192,420 dozens of case eggs, 359,420 pounds of broken-out eggs, and 2,966,526 pounds of butter.

## QUARTERLY REPORT ON SLAUGHTERING.

A compilation of the quarterly reports on slaughtering for the quarter ending April 1 shows that during that period 38,837 animals were inspected by the local inspectors of slaughtering throughout the State. Of that number, 6,506 were cattle, 16,061 were calves, 15,783 were hogs, 481 were sheep and 6 were goats. In addition to a number of parts, which were condemned where it was not necessary to condemn the entire carcass, 851 animals were condemned. Of this number, 161 were cattle, 659 were calves and 131 were hogs. There were 465 calves condemned on account of immaturity; 167 animals on account of tuberculosis, of which 129 were cattle, 3 were calves and 35 were hogs; 51 hogs on account of hog cholera; 15 animals on account of pneumonia, of which 1 was a cow and 14 were hogs; 11 calves on account of dysentery; 23 animals on account of emaciation, of which 1 was a cow, 15 were calves and 7 were hogs; 20 animals were either bruised, lacerated or injured, of which 5 were cattle, 13 were calves and 2 were hogs. The remaining 99 animals were condemned on account of actinomycosis, pleurisy, nephritis, jaundice, peritonitis, necrosis of liver, diarrhœa, abscesses, ulcers, chloasma, septicæmia, dropsy, milk fever, mammitis, inflammation, parturient apoplexy, parturient paresis, advanced pregnancy, stillbirth, weak condition, sexual odor, inspector not present, and died otherwise than by slaughter.

These figures, as compared with the figures for the same period in 1917, show a decrease in all the carcasses inspected, except sheep, amounting to about 2,500 cattle, about 11,035 calves and about 7,365 hogs. The number of sheep inspected shows an increase of about 300. The number of condemnations in cattle, calves and hogs is practically the same.

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF APRIL, 1918.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of April, 1918: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, | 700 | 81 | 340 | 92 | 187 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, | 442 | 89 | 353 | |
| *Typhoid fever (Widal test), | 119 | 18 | 90 | 11 |
| Typhoid fever (culture test), | 27 | 1 | 26 | |
| Malaria, | 6 | – | 6 | |
| Gonorrhœa, | 89 | 36 | 53 | |
| Miscellaneous, | 83 | | | |

Total number of examinations made, 1,466.

## RÉSUMÉ OF COMMUNICABLE DISEASES FOR MARCH, 1918.

### General Prevalence.

There were 14,752 cases of communicable disease reported in April, an increase of 1,990 cases over the March total which was 12,762, and 6,121 cases more than the April, 1917, total of 8,631 cases.

The increase in cases is largely confined to lobar pneumonia, measles, German measles and whooping cough.

*Anthrax.* — The single case of anthrax reported for the month occurred in a hide handler in a leather factory in Haverhill.

*Epidemic Cerebrospinal Meningitis.* — There were 67 cases of cerebrospinal meningitis reported from 24 communities in the State. This disease is becoming more prevalent throughout the State, and it is important that each physician have a spinal fluid examination made for every case, in order that his diagnosis may be confirmed by laboratory examination.

*Septic Sore Throat.* — This disease showed an increase of 6 cases over the preceding month. Nine of the 19 cases occurred in the town of Holliston.

*Smallpox.* — Two cases of smallpox were reported for April. The first case was an inmate of the Tewksbury State Infirmary, and the source of infection was a previous case at the infirmary. The patient was never successfully vaccinated. The second case occurred in a woman who cleaned offices in public buildings. The patient was never successfully vaccinated, and the source of infection was not ascertained.

*Typhoid Carrier.* — A typhoid carrier was discovered during the month in a maid employed in a private family. The carrier gave a history of having had typhoid fever twenty years ago, and a specimen of feces proved positive. The carrier was responsible for one case of typhoid fever in the family in which she was employed.

*Diseases on the Premises of Milk Handlers.* — There were 6 cases of scarlet fever and 1 case of diphtheria on milk-producing farms during the month. All of the cases were carefully isolated by the local boards of health, and the infection was not spread to the consumers except in one instance when the disease was not recognized until two persons employed in the handling of the milk were found to be desquamating.

### Outbreaks and Epidemics.

*Diphtheria.* — In Malden 22 cases of diphtheria were reported. The cases were mostly scattered throughout the city. During the course of investigation, in one instance 4 cases were discovered in one family by taking cultures from other members of the family, and in another instance, 5 cases were discovered by culturing the throats of the contacts.

*Measles.* — There were 174 cases of measles reported from Lawrence. The epidemic started in one of the schools among the pupils of the lower grades, but now the disease is well scattered all over the city.

In Chelmsford there were 102 cases reported. The outbreak started by a family being exposed to an unrecognized case that was visiting them.

*Scarlet Fever.* — In Adams 14 cases of scarlet fever were reported. Five of the cases attended the Notre Dame School, and 3 cases were also reported from one family.

A distinct outbreak of 97 cases of scarlet fever occurred in Holliston. Investigation established the fact that the cases were not of school age and that they were mostly on the route of one milk dealer. The premises of this milk dealer were visited, and two persons who handled the milk were found to be desquamating. These cases were immediately isolated, all the milk was pasteurized and all utensils used in handling the milk were sterilized. Following this action, the number of cases immediately began to decrease. In less than one week the outbreak was checked, and no more cases were reported.

## RARE DISEASES.

*Anterior poliomyelitis* was reported from Boston, 1; Cambridge, 1; Lowell, 1; Medford, 1; Methuen, 1; and Springfield, 1.

*Anthrax* was reported from Haverhill, 1.

*Dog bite* was reported from Charlton, 1; and Lowell, 2.

*Epidemic cerebrospinal meningitis* was reported from Boston, 21; Cambridge, 7; Camp Devens, 3; Chelmsford, 1; Chelsea, 2; Concord, 1; Fall River, 2; Holyoke, 1; Lawrence, 2; Leominster, 1; Lowell, 3; Malden, 1; Mansfield, 1; Milton, 1; New Bedford, 1; Northbridge, 1; Pittsfield, 2; Revere, 2; South Hadley, 1; Sutton, 1; Waltham, 1; Weymouth, 1; Winthrop, 1; and Worcester, 9.

*Malaria* was reported from Boston, 1; Dedham, 2; Lynn, 1; and Newton, 1.

*Pellagra* was reported from Cambridge, 1; and Northampton, 1.

*Septic sore throat* was reported from Boston, 2; Fall River, 1; Haverhill, 1; Holliston, 9; Lenox, 1; Leominster, 2; Lowell, 1; Melrose, 1; and Watertown, 1.

*Smallpox* was reported from Chelsea, 1; and Tewksbury State Infirmary, 1.

*Tetanus* was reported from Concord, 1.

*Trachoma* was reported from Boston, 7; Cambridge, 1; Lowell, 1; and Plymouth, 1.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | March, 1918. | April, 1918. | April, 1917. |
|---|---|---|---|
| Total cases, . . . . . . . | 12,762 | 14,752 | 8,631 |
| Case rate per 100,000 population, . . | 325.5 | 376.2 | 224.2 |

### *Certain Prevalent Diseases.*

| | March, 1918. | April, 1918. | April, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[1] | | |
|---|---|---|---|---|---|---|
| Diphtheria: — | | | | Cambridge, . . | (30) | 70 |
| Total cases, . . . . . . | 747 | 667 | 738 | Malden, . . . | (15) | 22 |
| Case rate per 100,000 population, . | 19.1 | 17.0 | 19.2 | Woburn, . . | (0) | 6 |
| | | | | Dartmouth, . . | (2) | 32 |
| | | | | Boston, . . . | (740) | 1,400 |
| | | | | Brockton, . . | (8) | 54 |
| | | | | Brookline, . . | (33) | 152 |
| | | | | Foxborough, . . | (1) | 20 |
| | | | | Norwood, . . | (3) | 75 |
| | | | | Quincy, . . . | (35) | 161 |
| | | | | Beverly, . . . | (6) | 87 |
| | | | | Chelsea, . . . | (33) | 165 |
| | | | | Haverhill, . . | (38) | 187 |
| | | | | Newbury, . . | (0) | 25 |
| Measles: — | | | | Salem, . . . | (11) | 101 |
| Total cases, . . . . . . | 4,018 | 5,210 | 3,170 | Arlington, . . | (3) | 49 |
| Case rate per 100,000 population, . | 102.5 | 132.9 | 82.4 | Belmont, . . | (4) | 28 |
| | | | | Chelmsford, . . | (1) | 102 |
| | | | | Lawrence, . . | (54) | 174 |
| | | | | Somerville, . . | (81) | 219 |
| | | | | Waltham, . . | (30) | 147 |
| | | | | Westford, . . | (0) | 55 |
| | | | | Milford, . . . | (1) | 49 |
| | | | | Natick, . . . | (1) | 64 |
| | | | | Southbridge, . . | (2) | 22 |
| | | | | Westborough, . | (1) | 36 |
| | | | | Clinton, . . . | (4) | 40 |
| | | | | Shirley, . . . | (0) | 37 |
| | | | | Springfield, . . | (94) | 209 |
| Scarlet fever: — | | | | Brewster, . . | (0) | 5 |
| Total cases, . . . . . . | 537 | 626 | 652 | Holliston, . . | (0) | 97 |
| Case rate per 100,000 population, . | 13.7 | 16.0 | 17.0 | Adams, . . . | (0) | 14 |
| Typhoid fever: — | | | | | | |
| Total cases, . . . . . . | 41 | 53 | 111 | | | |
| Case rate per 100,000 population, . | 1.0 | 1.4 | 2.9 | | | |
| Whooping cough: — | | | | Watertown, . . | (1) | 16 |
| Total cases, . . . . . . | 759 | 855 | 263 | Newton, . . | (9) | 60 |
| Case rate per 100,000 population, . | 19.4 | 21.8 | 6.8 | Gardner, . . | (0) | 17 |
| | | | | Leominster, . . | (2) | 18 |
| Tuberculosis, pulmonary: — | | | | | | |
| Total cases, . . . . . . | 826 | 793 | 725 | | | |
| Case rate per 100,000 population, . | 21.1 | 20.2 | 18.8 | | | |
| Tuberculosis, other forms: — | | | | | | |
| Total cases, . . . . . . | 86 | 87 | 55 | | | |
| Case rate per 100,000 population, . | 2.2 | 2.2 | 1.4 | | | |

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[1] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

## INTERSTATE RECIPROCAL NOTIFICATION IN APRIL.

| Disease and Locality of Notification. | Health Authority referred to — | Why referred. |
|---|---|---|
| Gonorrhœa; Worcester, | State Board of Health, Burlington, Vt. | Patient in infective stage of gonorrhœa went to hospital in Vermont for treatment. |
| Tuberculosis; Camp Devens, | State Board of Health, Harrisburg, Pa. | Case discharged from Camp Devens and returned to his home in Pennsylvania. |
| Tuberculosis; Camp Devens, | State Board of Health, St. Paul, Minn. | Case discharged from Camp Devens and returned to his home in Minnesota. |
| Tuberculosis; Camp Devens, | State Board of Health, Tampa, Fla. | Twelve cases discharged from Camp Devens and returned to their homes in Florida. |
| Tuberculosis; Camp Devens, | State Board of Health, Columbia, S. C. | Case discharged from Camp Devens and returned to his home in South Carolina. |
| Tuberculosis; Camp Devens, | State Board of Health, Providence, R. I. | Three cases discharged from Camp Devens and returned to their homes in Rhode Island. |
| Tuberculosis; Camp Devens, | State Department of Health, Albany, N. Y. | Two cases discharged from Camp Devens and returned to their homes in New York. |
| Tuberculosis; Camp Devens, | State Board of Health, Concord, N. H. | Three cases discharged from Camp Devens and returned to their homes in New Hampshire. |
| Tuberculosis; Camp Devens, | State Department of Health, Hartford, Conn. | Twelve cases discharged from Camp Devens and returned to their homes in Connecticut. |
| Typhoid fever; Orleans, | State Board of Health, Austin, Tex. | Patient returned from Fort Sam Houston, Tex., ill and diagnosis of typhoid fever was made on his arrival home. |

## OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES.

| Disease. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Anthrax, | Beam house worker, | Haverhill, | M | 45 | W |
| Chlorine, | Printer's helper, | Adams, | M | 30 | W |
| Chrome, | Leather finisher, | Salem, | M | 35 | W |
| Dermatitis, | Shoe dresser, | Brockton, | F | 44 | W |
| Lead, | Chemical mixer, | Woburn, | M | 28 | W |
| Lead, | Beering scraper, | Worcester, | M | – | W |
| Lead, | Frame worker, | Worcester, | M | 33 | W |

## NEW LEGISLATION.

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### Resolves, Chapter 49.

### Resolve providing for a report by the state board of agriculture and the state department of health on the expediency of utilizing the peat deposits in the commonwealth.

*Resolved,* That the state board of agriculture and the state department of health, acting jointly under the provisions of chapter two hundred and twelve of the General Acts of nineteen hundred and seventeen, be directed to consider the expediency of utilizing for fuel and other purposes the peat deposits within the commonwealth, and to make in their annual report under the said chapter such recommendations relative thereto as may appear advisable. [*Approved April 26, 1918.*

### General Acts, Chapter 137.

### An Act relative to the procedure in prosecutions for selling or keeping adulterated or misbranded vinegar.

*Be it enacted, etc., as follows:*

The examination of samples of vinegar taken under authority of law shall be made under the direction and supervision of the state department of health or of the boards of health of the several cities and towns. If it shall appear upon examination that any sample is misbranded or adulterated within the meaning of the law, the state department of health, or the local board of health, as the case may be, shall not be required to cause formal complaint to be entered at once, but shall grant the opportunity of a hearing in accordance with the provisions of section five of chapter two hundred and eight of the General Acts of nineteen hundred and seventeen. [*Approved April 11, 1918.*

### Special Acts, Chapter 140.

### An Act making an appropriation for the control, suppression and treatment of venereal diseases.

*Be it enacted, etc., as follows:*

Section 1. A sum not exceeding thirty thousand dollars is hereby appropriated, to be paid out of the treasury of the commonwealth from the ordinary revenue, to be expended by the state department of health, subject to the approval of the governor and council, for the control, suppression and treatment of venereal diseases.

Section 2. This act shall take effect upon its passage. [*Approved April 24, 1918.*

## GENERAL ACTS, CHAPTER 145.

### AN ACT RELATIVE TO THE STANDARD OF CIDER VINEGAR AND TO THE SALE THEREOF.

*Be it enacted, etc., as follows:*

SECTION 1. Section sixty-seven of chapter fifty-seven of the Revised Laws, as amended by section two of chapter six hundred of the acts of nineteen hundred and eleven, by section one of chapter two hundred and thirty-nine of the General Acts of nineteen hundred and fifteen, and by chapter one hundred and eighty-nine of the General Acts of nineteen hundred and sixteen, is hereby further amended by striking out the said section and substituting the following: — *Section 67.* Vinegar shall contain no added or artificial coloring matter, and shall contain not less than four grams of acetic acid in one hundred cubic centimeters of the vinegar. If vinegar contains any added or artificial coloring matter, or less than the required amount of acidity, it shall be deemed to be adulterated. There shall be published in the monthly bulletin of the state department of health such methods for the analysis of vinegar as may be prescribed from time to time by the commissioner of health, and said methods shall be those published by the association of official agricultural chemists. No person shall determine the value of vinegar as a basis for payment in buying or selling, or for the purpose of inspection in any manner, otherwise than by the methods herein described.

SECTION 2. This act shall take effect upon its passage. [*Approved April 12, 1918.*

## GENERAL ACTS, CHAPTER 170.

### AN ACT RELATIVE TO THE CLASSIFICATION AND GRADING OF MILK.

*Be it enacted, etc., as follows:*

Section three of chapter two hundred and fifty-six of the General Acts of nineteen hundred and seventeen is hereby amended by striking out the word "two", in the sixth line, and substituting the word: — one, — so as to read as follows: — *Section 3.* The board of health of any city or town, upon application of any person, firm, association or corporation, desiring to sell or exchange milk therein as "Grade A, Massachusetts Milk", shall cause the milk produced or to be sold or exchanged by such applicant to be tested for classification as prescribed by section one of this act, and if upon such examination and test the milk so produced or to be sold or exchanged by the applicant is found to comply with the aforesaid requirements of classification of "Grade A, Massachusetts Milk", the board of health shall issue without charge to the applicant a written permit to keep for sale, exchange or delivery, or to sell, exchange or deliver in such city or town, milk graded, classified, designated and labelled, as hereinbefore provided, as "Grade A, Massachusetts Milk". Any permit so issued may, at any time, be revoked upon written notice to the holder thereof, by the board of health issuing the same, if milk offered by the holder for sale or exchange as so graded or classified shall not comply with the aforesaid requirements. [*Approved April 24, 1918.*

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, . . . . | 3,920,988 | 422 | 1 | 744 | **55** | 51 | **30** | 2,149 | 1 | 796 | **490** | 4,018 | **59** |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, . . . . . . | 793,471 | 60 | - | 303 | **14** | 18 | **13** | 140 | - | 152 | **116** | 878 | **17** |
| 4 | Cities, 150,000–200,000. | | | | | | | | | | | | | |
| 5 | Worcester, . . . . . | 173,419 | 3 | - | 28 | **2** | 4 | - | 77 | - | 63 | **26** | 22 | - |
| 6 | Cities, 100,000–150,000. | *578,593* | *49* | - | *104* | *12* | *9* | *6* | *104* | - | *114* | *78* | *458* | *15* |
| 7 | Fall River, . . . . . | 128,317 | 6 | - | 20 | **4** | 2 | **2** | 2 | - | 16 | **7** | 15 | - |
| 8 | New Bedford, . . . . | 117,855 | 15 | 1 | 4 | - | - | - | 2 | - | 15 | **12** | 65 | **4** |
| 9 | Springfield, . . . . . | 111,983 | 11 | - | 16 | **3** | - | - | 39 | - | 52 | **23** | 134 | **4** |
| 10 | Cambridge, . . . . . | 111,379 | 13 | - | 45 | **1** | 2 | - | 44 | - | 23 | **10** | 225 | **7** |
| 11 | Lowell, . . . . . . | 109,059 | 4 | - | 19 | **4** | 5 | **4** | 17 | - | 8 | **26** | 19 | - |
| 12 | Cities, 50,000–100,000. | *569,719* | *33* | - | *77* | *10* | *9* | *6* | *162* | - | *160* | *91* | *505* | *7* |
| 13 | Lynn, . . . . . . . | 99,952 | - | - | 9 | **2** | - | - | 51 | - | 37 | **20** | 46 | **1** |
| 14 | Lawrence, . . . . . . | 93,060 | 5 | - | 7 | **1** | 2 | - | 9 | - | 14 | **14** | 36 | **1** |
| 15 | Somerville, . . . . . | 93,026 | 3 | - | 25 | **2** | 1 | **1** | 22 | - | 23 | **13** | 103 | **1** |
| 16 | Brockton, . . . . . . | 65,746 | 10 | - | 3 | - | 1 | - | 29 | - | 20 | **10** | 45 | - |
| 17 | Holyoke, . . . . . . | 62,796 | 4 | - | 4 | **1** | - | - | - | - | 5 | **7** | 9 | - |
| 18 | Haverhill, . . . . . . | 52,873 | 2 | - | 5 | **2** | 1 | **1** | 32 | - | 23 | **4** | 129 | **1** |
| 19 | Malden, . . . . . . | 51,798 | 6 | - | 16 | **2** | 1 | **1** | 11 | - | 9 | **6** | 19 | - |
| 20 | Chelsea, . . . . . . | 50,468 | 3 | - | 8 | - | 3 | **3** | 8 | - | 29 | **17** | 118 | **3** |
| 21 | Cities and Towns, 25,000–50,000. | *487,764* | *67* | - | *78* | *8* | *4* | *2* | *519* | - | *80* | *51* | *999* | *8* |
| 22 | Quincy, . . . . . . | 45,827 | 6 | - | 8 | - | 1 | - | 15 | - | 2 | **7** | 280 | **4** |
| 23 | Newton, . . . . . . | 45,234 | 19 | - | 5 | **1** | - | - | 196 | - | 14 | **7** | 120 | **2** |
| 24 | Pittsfield, . . . . . . | 44,410 | 6 | - | 4 | **1** | - | - | 21 | - | 6 | **4** | 9 | - |
| 25 | Salem, . . . . . . . | 41,082 | - | - | 5 | - | 3 | - | 61 | - | 9 | **2** | 46 | - |
| 26 | Fitchburg, . . . . . . | 40,830 | 3 | - | 3 | **1** | - | - | 63 | - | 3 | **6** | 16 | - |
| 27 | Everett, . . . . . . | 40,435 | 1 | - | 10 | **1** | - | - | 3 | - | 11 | **4** | 60 | - |
| 28 | Taunton, . . . . . . | 37,381 | - | - | 1 | - | - | - | - | - | 4 | **6** | 2 | - |
| 29 | Brookline, . . . . . . | 37,147 | 10 | - | 7 | - | - | - | 99 | - | 5 | **2** | 108 | - |
| 30 | Medford, . . . . . . | 35,230 | 1 | - | 9 | - | - | - | 6 | - | 1 | **1** | 20 | - |
| 31 | Chicopee, . . . . . . | 33,177 | 3 | - | 9 | **2** | - | **1** | - | - | 6 | **5** | 2 | - |
| 32 | Waltham, . . . . . . | 31,643 | 18 | - | 5 | **1** | - | **1** | 19 | - | 5 | **4** | 16 | - |
| 33 | Revere, . . . . . . | 29,643 | - | - | 12 | **1** | - | - | - | - | 1 | **1** | - | - |
| 34 | Beverly, . . . . . . | 25,725 | - | - | - | - | - | - | 36 | - | 13 | **2** | 320 | **2** |
| 35 | Cities and Towns, 10,000–25,000. | *575,996* | *96* | - | *84* | *4* | *4* | *2* | *503* | *1* | *118* | *51* | *518* | *3* |
| 36 | Gloucester, . . . . . | 24,529 | 3 | - | 1 | **1** | 1 | - | 20 | - | 5 | **3** | 2 | - |
| 37 | Northampton, . . . . | 23,081 | 4 | - | 1 | - | - | - | 10 | - | 4 | **1** | 3 | - |
| 38 | North Adams, . . . . | 22,045 | - | - | - | - | - | - | - | - | 1 | - | - | - |
| 39 | Peabody, . . . . . . | 20,489 | 1 | - | - | - | - | **1** | 6 | - | 4 | **1** | 10 | - |
| 40 | Attleboro, . . . . . . | 19,933 | 1 | - | 1 | - | - | - | 34 | - | 6 | **1** | 2 | **1** |
| 41 | Westfield, . . . . . . | 19,929 | 20 | - | 2 | - | - | - | 26 | - | 12 | **4** | 6 | - |
| 42 | Watertown, . . . . . | 18,851 | - | - | 8 | - | - | - | 5 | 1 | 6 | **2** | 45 | - |
| 43 | Framingham, . . . . . | 17,728 | 7 | - | 2 | - | - | - | 136 | - | 2 | **2** | 10 | - |
| 44 | Leominster, . . . . . | 17,688 | 2 | - | 4 | - | - | - | 28 | - | 4 | **1** | 29 | - |
| 45 | Melrose, . . . . . . | 17,627 | 2 | - | 3 | - | - | - | 34 | - | 4 | **3** | 8 | - |
| 46 | Gardner, . . . . . . | 17,451 | 2 | - | 5 | - | - | - | 14 | - | 1 | - | 11 | **1** |
| 47 | Arlington, . . . . . . | 17,264 | 3 | - | 6 | - | - | - | 7 | - | 1 | **2** | 44 | - |
| 48 | Woburn, . . . . . . | 17,116 | - | - | 2 | - | - | - | 10 | - | 3 | **2** | 16 | - |
| 49 | Marlborough, . . . . | 15,680 | - | - | 1 | - | - | - | 6 | - | 4 | **1** | 54 | - |
| 50 | Methuen, . . . . . . | 15,649 | 6 | - | 3 | - | - | - | 1 | - | - | **2** | 10 | - |
| 51 | Newburyport, . . . . | 15,542 | 16 | - | 1 | - | 1 | - | 4 | - | 6 | - | 2 | - |

---

[1] Deaths are available for publication each month through the courtesy of the office of the Secretary for addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH,[1] MARCH, 1918.

| 38A Ophthalmia Neonatorum. | | 38B Suppurative Conjunctivitis. | | 75A Trachoma. | | 19C Mumps. | | 7 Scarlet Fever. | | 28-29 Tuberculosis, Pulmonary. | | 30-35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 38C Gonorrhœa. | | 37 Syphilis. | | 8 Whooping Cough. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| 134 | – | 68 | – | 8 | – | 722 | – | 540 | 10 | 826 | 443 | 86 | 67 | 41 | 5 | 982 | – | 376 | 24 | 759 | 54 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 45 | – | 12 | – | 5 | – | 107 | – | 103 | 4 | 261 | 95 | 27 | 18 | 3 | – | 364 | – | 134 | 6 | 213 | 9 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 16 | – | 4 | – | – | – | – | – | 9 | 1 | 32 | 21 | 7 | 9 | 1 | – | 14 | – | 8 | – | 1 | – | 5 |
| *29* | – | *13* | – | *1* | – | *119* | – | *72* | *1* | *154* | *74* | *17* | *11* | *7* | *2* | *128* | – | *32* | *2* | *92* | *11* | 6 |
| 9 | – | 2 | – | – | – | 17 | – | 16 | – | 39 | 24 | 5 | 2 | 2 | 1 | 20 | – | 4 | 1 | 17 | 3 | 7 |
| 5 | – | – | – | – | – | 3 | – | 9 | 1 | 59 | 17 | 5 | 2 | 3 | 1 | 31 | – | 9 | 1 | 5 | 2 | 8 |
| 4 | – | 1 | – | – | – | 69 | – | 24 | – | 13 | 10 | 4 | 4 | – | – | 32 | – | 8 | – | 30 | – | 9 |
| 7 | – | 8 | – | 1 | – | 30 | – | 15 | – | 19 | 15 | 2 | 1 | – | – | 25 | – | 8 | – | 34 | 1 | 10 |
| 4 | – | 2 | – | – | – | – | – | 8 | – | 24 | 8 | 1 | 2 | 2 | – | 20 | – | 3 | – | 6 | 5 | 11 |
| *23* | – | *12* | – | *1* | – | *49* | – | *99* | *3* | *112* | *55* | *10* | *7* | *8* | *1* | *99* | – | *39* | *4* | *125* | *12* | 12 |
| 2 | – | 7 | – | – | – | 12 | – | 17 | 1 | 16 | 11 | 2 | – | – | – | 32 | – | 13 | 1 | 22 | 3 | 13 |
| – | – | – | – | 1 | – | 2 | – | 2 | – | 21 | 12 | 5 | 2 | 1 | – | 6 | – | 6 | – | 33 | 3 | 14 |
| 1 | – | – | – | – | – | 4 | – | 13 | – | 19 | 7 | – | 2 | 1 | – | 4 | – | 4 | 1 | 2 | 3 | 15 |
| 4 | – | 4 | – | – | – | 27 | – | 21 | – | 9 | 2 | – | – | 2 | 1 | 14 | – | 5 | 1 | 39 | 1 | 16 |
| – | – | – | – | – | – | 1 | – | 9 | – | 9 | 8 | – | 1 | 2 | – | 4 | – | – | – | 5 | 1 | 17 |
| 5 | – | – | – | – | – | 1 | – | 13 | 1 | 12 | 7 | 1 | – | 2 | – | 31 | – | 8 | 1 | 7 | 1 | 18 |
| 5 | – | – | – | – | – | – | – | 17 | 1 | 14 | 5 | 1 | 2 | – | – | 2 | – | 1 | – | 6 | – | 19 |
| 6 | – | 1 | – | – | – | 2 | – | 7 | – | 12 | 3 | 1 | – | – | – | 6 | – | 2 | – | 11 | – | 20 |
| *5* | – | *7* | – | – | – | *97* | – | *103* | *1* | *97* | *45* | *7* | *7* | *5* | – | *56* | – | *21* | *1* | *87* | *4* | 21 |
| – | – | – | – | – | – | 4 | – | 11 | – | 5 | 4 | – | 1 | – | – | 7 | – | 1 | – | 4 | 1 | 22 |
| 1 | – | 3 | – | – | – | 14 | – | 3 | – | 3 | 5 | – | – | 2 | – | 4 | – | 3 | – | 25 | 1 | 23 |
| 1 | – | – | – | – | – | 5 | – | 13 | – | 8 | 5 | – | – | – | – | 4 | – | 1 | – | 3 | – | 24 |
| – | – | – | – | – | – | 14 | – | 1 | – | 6 | 3 | 2 | 1 | – | – | 4 | – | 1 | – | – | – | 25 |
| 1 | – | 1 | – | – | – | 9 | – | 11 | 1 | 14 | 2 | 2 | – | – | – | 2 | – | 4 | 1 | 25 | – | 26 |
| – | – | 2 | – | – | – | 1 | – | 15 | – | 15 | 8 | – | – | 1 | – | 2 | – | – | – | 16 | – | 27 |
| – | – | – | – | – | – | 6 | – | 10 | – | 15 | 4 | – | 1 | 1 | – | 6 | – | – | – | 7 | 1 | 28 |
| – | – | – | – | – | – | 3 | – | 15 | – | 5 | 3 | 1 | – | 1 | – | – | – | 1 | – | 3 | – | 29 |
| – | – | – | – | – | – | 1 | – | 13 | – | 7 | 1 | – | 1 | – | – | 3 | – | 2 | – | 2 | 1 | 30 |
| – | – | 1 | – | – | – | 2 | – | 2 | – | 8 | 5 | – | – | – | – | – | – | – | – | 1 | – | 31 |
| – | – | – | – | – | – | 38 | – | 2 | – | 3 | 3 | 1 | 2 | – | – | 10 | – | 1 | – | 1 | – | 32 |
| 2 | – | – | – | – | – | – | – | 6 | – | 2 | 1 | – | – | – | – | 14 | – | 5 | – | – | – | 33 |
| – | – | – | – | – | – | – | – | 1 | – | 6 | 1 | 1 | 1 | – | – | – | – | 2 | – | – | – | 34 |
| *10* | – | *3* | – | *1* | – | *168* | – | *65* | – | *93* | *49* | *8* | *8* | *8* | *1* | *50* | – | *12* | *3* | *123* | *9* | 35 |
| 1 | – | – | – | – | – | 1 | – | 1 | – | 3 | 1 | – | 1 | – | – | 5 | – | 1 | 1 | – | – | 36 |
| – | – | 1 | – | – | – | 4 | – | 4 | – | 6 | 5 | 1 | 1 | – | – | 3 | – | – | – | – | – | 37 |
| – | – | – | – | – | – | – | – | – | – | 4 | 3 | – | – | – | – | 1 | – | 1 | – | 1 | – | 38 |
| 1 | – | – | – | – | – | 3 | – | 1 | – | 4 | 2 | 1 | 1 | – | – | 4 | – | – | – | – | – | 39 |
| – | – | 1 | – | – | – | 4 | – | 1 | – | 2 | – | 1 | – | – | – | 6 | – | 1 | – | 16 | – | 40 |
| – | – | – | – | – | – | 19 | – | 4 | – | 2 | 3 | 1 | – | – | – | 1 | – | – | – | 3 | – | 41 |
| – | – | – | – | – | – | – | – | 3 | – | 5 | 2 | – | – | – | – | 1 | – | 1 | – | 3 | – | 42 |
| – | – | – | – | – | – | 1 | – | 1 | – | 9 | 1 | – | – | 1 | – | – | – | – | – | – | – | 43 |
| – | – | – | – | – | – | – | – | 5 | – | 6 | 2 | – | – | 1 | – | 8 | – | – | – | 2 | 1 | 44 |
| 5 | – | 1 | – | – | – | – | – | 2 | – | 1 | 1 | – | 1 | – | – | – | – | – | – | 1 | 1 | 45 |
| – | – | – | – | – | – | – | – | 2 | – | 2 | 2 | – | – | – | – | – | – | – | – | 39 | 2 | 46 |
| – | – | – | – | – | – | – | – | 1 | – | 4 | 4 | – | – | – | – | 1 | – | 3 | – | – | – | 47 |
| – | – | – | – | – | – | – | – | 4 | – | 2 | 3 | – | – | – | – | 1 | – | – | – | – | 1 | 48 |
| 1 | – | – | – | – | – | 1 | – | 3 | – | 1 | 2 | – | – | – | – | 2 | – | 1 | 1 | – | – | 49 |
| – | – | – | – | – | – | – | – | – | – | 4 | – | – | – | 2 | 1 | 3 | – | – | – | 1 | – | 50 |
| – | – | – | – | 1 | – | 53 | – | – | – | 2 | – | 1 | – | – | – | 1 | – | 1 | – | 4 | – | 51 |

of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | CITIES AND TOWNS GROUPED IN ORDER OF POPULATION. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 15,255 | – | – | 2 | – | – | – | – | – | – | 2 | 20 | – |
| 53 | Weymouth, | 14,659 | – | – | 1 | 1 | – | – | – | – | 4 | 4 | – | – |
| 54 | Winthrop, | 14,443 | – | – | 6 | – | – | – | 11 | – | 2 | – | 14 | – |
| 55 | Milford, | 14,088 | – | – | – | – | – | – | 1 | – | – | – | 15 | – |
| 56 | Greenfield, | 14,028 | – | – | 1 | – | 1 | – | 19 | – | 2 | 1 | 3 | – |
| 57 | Wakefield, | 13,664 | 1 | – | 18 | 1 | – | – | 5 | – | – | 1 | 3 | – |
| 58 | Plymouth, | 13,430 | 1 | – | 2 | 1 | – | – | 3 | – | – | – | 11 | – |
| 59 | Adams, | 13,340 | – | – | 1 | – | – | – | – | – | 2 | – | 1 | – |
| 60 | Clinton, | 13,266 | 1 | – | – | – | – | – | 13 | – | 6 | 5 | 18 | – |
| 61 | Webster, | 13,242 | – | – | 1 | – | – | – | – | – | 2 | 1 | – | – |
| 62 | Norwood, | 12,879 | 15 | – | 1 | – | – | – | 13 | – | – | – | 46 | – |
| 63 | West Springfield, | 12,696 | 1 | – | 1 | – | – | – | 1 | – | 3 | 1 | – | – |
| 64 | Danvers, | 12,309 | 2 | – | – | – | 1 | 1 | 76 | – | 10 | 4 | 1 | – |
| 65 | Dedham, | 12,172 | 1 | – | 3 | – | – | – | – | – | 1 | – | 5 | – |
| 66 | Natick, | 11,924 | – | – | – | – | – | – | 2 | – | 12 | 1 | 27 | – |
| 67 | Saugus, | 11,625 | – | – | – | – | – | – | – | – | – | – | 7 | – |
| 68 | Easthampton, | 10,692 | – | – | 2 | – | – | – | – | – | 2 | – | 10 | – |
| 69 | Athol, | 10,582 | – | – | 1 | – | – | – | 3 | – | 2 | – | – | – |
| 70 | Bridgewater, | 10,468 | – | – | – | – | – | – | 6 | – | 5 | 5 | 1 | – |
| 71 | Winchester, | 10,451 | 6 | – | – | – | – | – | 8 | – | – | 1 | 45 | 1 |
| 72 | Braintree, | 10,162 | 1 | – | 3 | – | – | – | 1 | – | 2 | – | 38 | – |
| 73 | Palmer, | 10,019 | – | – | 1 | – | – | – | – | – | – | – | 1 | – |
| 74 | TOWNS, 5,000–10,000. | *346,607* | *32* | – | *35* | *3* | *1* | – | *334* | – | *54* | *45* | *343* | *6* |
| 75 | TOWNS, 2,500–5,000. | *182,889* | *28* | – | *20* | *2* | *1* | *1* | *189* | – | *19* | *11* | *78* | *1* |
| 76 | TOWNS UNDER 2,500. | *212,530* | *44* | – | *14* | – | – | – | *113* | – | *20* | – | *187* | *2* |
| 77 | STATE INFIRMARY, | | *9* | – | – | – | – | – | – | – | *2* | *1* | *1* | – |
| 78 | CAMP DEVENS, | | *1* | – | *1* | – | *1* | – | *8* | – | *14* | *7* | *29* | – |

In addition to the above there occurred 6 cases of anterior poliomyelitis, 1 in Boston, 1 in Cambridge, anthrax, 1 in Boston and 1 in Lynn, with 1 death in Lynn; 2 cases of dysentery, 1 in 1 in Pittsfield, with 1 death in Westfield; 2 cases of pellagra, 1 in Somerville and 1 in Worcester, Lowell, 5 in Marlborough, 1 in Milton and 1 in the State Infirmary; 2 cases of tetanus, 1 in Fall River sore throat, 2 in Boston, 1 in Brookline, 1 in Dover, 1 in Lynn, 1 in Melrose, 2 in Newburyport, 2 ton, 1 in Sandwich and 1 in Worcester; and 1 death from typhus fever in Boston.

TO THE PUBLIC HEALTH — Concluded.

| 38A | | 38B | | 75A | | 19C | | 7 | | 28–29 | | 30–35 | | 1 | | 38C | | 37 | | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ophthalmia Neonatorum. | | Suppurative Conjunctivitis. | | Trachoma. | | Mumps. | | Scarlet Fever. | | Tuberculosis, Pulmonary. | | Tuberculosis, Other Forms. | | Typhoid Fever. | | Gonorrhœa. | | Syphilis. | | Whooping Cough. | | |
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 52 |
| – | – | – | – | – | – | – | – | – | – | 2 | 1 | – | 1 | – | – | 1 | – | – | – | – | – | 53 |
| – | – | – | – | – | – | 1 | – | 8 | – | 3 | – | – | – | – | – | 2 | – | – | – | 5 | – | 54 |
| – | – | – | – | – | – | – | – | 3 | – | 2 | – | – | – | – | – | – | – | – | – | 7 | – | 55 |
| 1 | – | – | – | – | – | 52 | – | 3 | – | 2 | – | – | – | – | – | – | – | – | – | 1 | – | 56 |
| – | – | – | – | – | – | – | – | 5 | – | 5 | 3 | 1 | – | – | – | – | – | – | – | – | – | 57 |
| – | – | – | – | – | – | – | – | – | – | 3 | – | – | – | – | – | – | – | 1 | – | – | 1 | 58 |
| – | – | – | – | – | – | – | – | 1 | – | 3 | 1 | – | – | – | – | – | – | – | – | 7 | 1 | 59 |
| – | – | – | – | – | – | 2 | – | 1 | – | 2 | 3 | – | – | 1 | – | – | – | – | – | 2 | – | 60 |
| – | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | 3 | – | – | – | 3 | – | 61 |
| – | – | – | – | – | – | – | – | 1 | – | 2 | 1 | – | – | 1 | – | – | – | – | – | 9 | – | 62 |
| – | – | – | – | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | 63 |
| – | – | – | – | – | – | 9 | – | 2 | – | – | 2 | – | – | – | – | – | – | – | – | – | – | 64 |
| – | – | – | – | – | – | 6 | – | – | – | 1 | 1 | – | – | – | – | – | – | – | – | 2 | – | 65 |
| – | – | – | – | – | – | 2 | – | 3 | – | 3 | 1 | – | – | – | – | – | – | 2 | – | 4 | – | 66 |
| 1 | – | – | – | – | – | – | – | – | – | 1 | 1 | – | – | – | – | – | – | – | – | 3 | 1 | 67 |
| – | – | – | – | – | – | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | 7 | – | 68 |
| – | – | – | – | – | – | 1 | – | 1 | – | 1 | – | 1 | 1 | – | – | 3 | – | – | – | 3 | 1 | 69 |
| – | – | – | – | – | – | 2 | – | 1 | – | 2 | 1 | – | 1 | 2 | – | – | – | – | – | – | – | 70 |
| – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | 71 |
| – | – | – | – | – | – | 3 | – | 1 | – | 2 | 1 | – | – | – | – | 4 | – | – | – | – | – | 72 |
| – | – | – | – | – | – | – | – | 1 | – | 1 | – | 1 | 1 | – | – | – | – | – | – | – | – | 73 |
| *4* | – | *16* | – | – | – | *100* | – | *38* | – | *36* | *29* | *5* | *2* | *5* | *1* | *22* | – | *8* | *3* | *54* | *6* | 74 |
| *1* | – | *1* | – | – | – | *50* | – | *19* | – | *9* | *14* | *1* | *1* | *2* | – | *7* | – | *6* | *1* | *35* | *2* | 75 |
| – | – | – | – | – | – | *21* | – | *29* | – | *16* | *35* | *2* | *3* | *2* | – | *242* | – | *116* | *3* | *29* | *1* | 76 |
| *1* | – | – | – | – | – | – | – | – | – | *16* | *25* | *2* | *1* | – | – | – | – | – | *1* | – | – | 77 |
| – | – | – | – | – | – | *11* | – | *3* | – | – | *1* | – | – | – | – | – | – | – | – | – | – | 78 |

1 in Everett, 1 in Fall River, and 2 in Lowell, with 2 deaths, 1 in Boston and 1 in Wellesley; 2 cases of Andover and 1 in Boston, with 1 death in Waltham; 2 cases of malaria, 1 in Boston and with 2 deaths, 1 in Boston and 1 in Stoneham; 10 cases of smallpox, 1 in Boston, 1 in Hardwick, 1 in and 1 in Sudbury, with 3 deaths, 1 in Concord, 1 in Fall River and 1 in Taunton; 13 cases of septic in Newton, 1 in Springfield, 1 in Waltham and 1 in Williamsburg, with 5 deaths, 1 in Natick, 2 in New-

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner, Eugene R. Kelley, M.D.

| | |
|---|---|
| Division of Administration, | Acting Director, Lyman A. Jones, M.D. |
| Division of Sanitary Engineering, | Director and Chief Engineer,<br>X. H. Goodnough, C.E. |
| Division of Communicable Diseases, | Director, John S. Hitchcock, M.D. |
| Division of Water and Sewage Laboratories, | Director and Chemist, H. W. Clark. |
| Division of Biologic Laboratories, | Director and Pathologist,<br>Milton J. Rosenau, M.D. |
| Division of Food and Drugs, | Director and Analyst,<br>Hermann C. Lythgoe, S.B. |
| Division of Hygiene, | Director, Lyman A. Jones, M.D. |

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Wm. J. Gallivan, M.D.
John T. Wheelwright.

## State District Health Officers.

| | |
|---|---|
| The Southeastern District, | Adam S. MacKnight, M.D., Fall River. |
| The Eastern District, | Merrill E. Champion, M.D., Wollaston. |
| The Northeastern District, | Arthur A. Brown, M.D., Swampscott. |
| The North Midland District, | Charles E. Simpson, M.D., Lowell. |
| The South Midland District, | William W. Walcott, M.D., Natick.[1]<br>George T. O'Donnell, M.D., Waltham. |
| The Wachusett District, | Francis A. Finnegan, M.D., Ayer. |
| The Connecticut Valley District, | —— —— |
| The Berkshire District, | Howard A. Streeter, M.D., Pittsfield. |

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[1] Leave of absence, military service.

# PUBLIC HEALTH BULLETIN

ISSUED MONTHLY
BY THE
STATE DEPARTMENT OF HEALTH
OF MASSACHUSETTS

JUNE, 1918

**Vol. 5, No. 6**

EUGENE R. KELLEY M.D., *Commissioner*

*The Common Health of the Commonwealth*

Entered as Second-class Matter Oct. 26, 1914, at the Post Office at Boston, Mass., under the Act of Aug. 24, 1912.

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Publication of this Document
approved by the
Supervisor of Administration.

# CERTAIN OBJECTIVES OF THE WEIGHING AND MEASURING CAMPAIGN.

BY MARY INGRAHAM WREN, PRESS CHAIRMAN, CHILD CONSERVATION COMMITTEE, STATE DEPARTMENT OF HEALTH.

SINCE the tests of weighing and measuring of children under five years have been completed in many cities and towns in Massachusetts, the uppermost question in the mind of the layman is, "What is to be done next?" This is only the first step in the great campaign to reduce infant mortality in the United States and to save 100,000 infant lives during the coming year. Massachusetts' quota is 3,094, and by what means is Massachusetts going to be able to save that number?

Since last August the child conservation committee of the State Department of Health, in co-operation with the woman's committee of the Council of National Defense, has been working on this problem and laying the foundation for a definite child welfare program to be put into operation in Massachusetts. Already almost the entire State has been surveyed by trained public health nurses to ascertain the causes of infant mortality. In a large number of communities active work has been started to remove these causes.

The national weighing and measuring campaign, which was inaugurated April 6 by the Federal Children's Bureau, makes possible an inventory of the children in every community in the State, and, as weight and height are a rough index of the health of the growing child, a test of these gives a satisfactory basis on which intensive follow-up work can be founded. In fact, the test can be of permanent value only as it leads to some definite development of work for young children in every community.

The records of these tests are kept on three separate cards, — one sent to the Children's Bureau, which will be of eminent statistical value, one given to the mother for reference, and one kept by the committee to use as a guide for future help to the child. These tests are of threefold value, — they give the parents an indication of the health of their own children, they provide a basis for judging how adequately the community is guarding all its children, and they offer a starting point for bettering the conditions of all young children. The individual parent can do much to help remedy unhealthful conditions, but the community must do even more, because, in the last analysis, each community is responsible for the well-being of its own children.

The weighing and measuring campaign has been uniform in its requirements throughout the State. The record of every child who has been weighed and measured has been carefully compared with the height and weight of the average or normal child. All children found to be undernourished, — that is, those who are under the average weight for their height, — and also those with defects or diseases, have been specially noted and placed on a follow-up list.

Cambridge, one of the first cities to make the tests, found that out of 4,052 children under five who were weighed and measured 470 needed special care. At the close of the Cambridge campaign a mass meeting was held with city officials and the State Commissioner of Health, Dr. Eugene R. Kelley, present, when the needs of the children were made known to the public. Plans were immediately made for each one of these children to have proper follow-up care in the home by the public health nurses, who will teach the mothers how to feed and care for these children so that they, too, may reach the normal mark.

One of the first essentials for the reduction of infant mortality is the public protection of the mother both before and after the birth of her child. The most indispensable factor in this humanitarian work is the public health nurse who, through her skill and sympathy, becomes both the friend and teacher in the home. It is she who teaches the expectant mother how to care for herself during the nine months of pregnancy, makes her realize the necessity for good care at the time of confinement, and also the wisdom of natural feeding, which, besides being the most economical, is best for the child; for the mother who extends the breast-feeding period through the first few months is not only saving the family purse but insuring better health for her child. The public health nurse recognizes when the older children are undernourished, and is able to suggest changes in the diet so that it will have more food value and, at the same time, will be more appetizing to the children. It is her trained eye that detects adenoids, bad teeth, deafness and many other defects which should be remedied immediately in order to prevent hampering defects in later life. Another most valuable service which she performs is actually demonstrating to the mother in her own surroundings, with the utensils that are at hand, what can be done to make living conditions better for the whole family. She is thus helping the mother to help herself.

A second factor in the follow-up work of the present baby-saving campaign is the establishment of more health conferences for both mother and child. These are twofold in their educational value, as they point out to the individual parents ways in which they may improve the care of their children, and they give a practical demonstration to the community of the value of keeping the well child well by periodic physical examination of babies and young children. At these health conferences which are conducted by a physician, assisted by a public health nurse, each child is given a careful physical examination, weighed and measured, and compared point by point with the normal child. From this examination the mother can see exactly where she is succeeding, where she is failing, and how she may secure better results. No medical advice is given at these public health stations, and only well babies are cared for, but when defects of any kind are discovered the conference physician advises the mother to consult her own physician. Although the great mass of children are apparently well, it is seldom that they are entirely free from some defects, and the discovery of these at an early stage is one of the chief aims of the conference.

When the public realizes that good health is for all, and not just for the fortunate few, and that through health conferences and public health nursing expert advice can be procured for children who are undernourished or suffering from defects that should be remedied in early childhood, then a higher standard of physical fitness will be assured for the rising generation.

The follow-up work resulting from this intensive national campaign of weighing and measuring will be principally focused on stimulating communities to establish more public health centers, and to employ a larger number of public health nurses, who will teach the mother personal hygiene, more careful feeding of the infant, — always urging breast feeding when possible, — more intelligent supervision of the diet of the older child who partakes of the family meal, and cleaner and better home surroundings for the whole family.

## NOTE ON THE PROGRESS OF THE MASSACHUSETTS VENEREAL DISEASE PROGRAM.

THE law covering the reporting of venereal diseases in the State of Massachusetts became effective on February 1. The machinery for making this law operative was completed about the 1st of March, and the first reports were received during the first half of March.

Of the cases which have been reported, 40 to 50 per cent. were from the city of Boston, which city has approximately 14 per cent. of the State's population. Boston reported, during the month of May, 47 per cent. of syphilitic and 46 per cent. of gonorrheal cases. During the month of May 1.5 per cent. of the reported cases of gonorrhea, and 1.3 per cent. of the cases of syphilis, ceased treatment and were reported by name. Since the law became operative 1,141 cases of syphilis and 2,651 cases of gonorrhea have been reported.

At the present time the State's program for the establishment of clinics and the general control of venereal disease is rapidly shaping itself, and within the next month or six weeks it is anticipated that the entire program will be working.

## FIVE FILTHY FINGERS.

DID you ever make a diary of your fingers? Did you ever set down in cold black and white the things your fingers touch every day, and did you ever consider the number of times daily that your unwashed fingers seek your mouth?

When surgeons discovered that it was their own infected fingers which carried germs into wounds they set about trying to discover a means whereby their hands could be rendered surgically clean, *i.e.*, free from germs. The whole realm of chemistry was ransacked for agents which would disinfect hands, and the scrubbings and immersions to which they subjected their hands are even yet a tender memory to the surgeons of that period. But all of these efforts proved useless, and at last in despair surgeons took to wearing rubber gloves which could be boiled, thus bringing to each patient, as it were, a fresh pair of sterile hands. In other words, try as you will you cannot by any known method make your hands absolutely clean.

The great agent in the spread of those diseases whose causative organism is present in the secretions of the mouth and nose is the human hand; and if saliva was bright green we would be amazed at the color of our fingers. As a matter of fact, most of us carry our fingers to our mouth or nose many times daily, there to implant the germs of disease which other careless people have spread about; there to collect a fresh cargo of infectious material to scatter for somebody else.

It is true that most germs of disease die quickly once they leave the human body, but what does the death of a few billion germs matter so long as the supply is copious and never-ending.

What an enormous number of infected things we touch during the day, and how infrequent and cursory are the hand washings we perform.

The answer is to keep your fingers out of your mouth and nose. Thus we limit the spread of disease from these orifices at least; thus we eliminate the danger of contracting disease from some one else who was not quite so careful.

## REPORT OF DIVISION OF FOOD AND DRUGS.

During the month of May, 1918, samples were collected in 62 cities and towns.

There were 1,073 samples of milk examined, of which 392 were below the legal standard, 18 samples were skimmed milk not properly labeled, and 51 samples contained added water.

There were 188 samples of food examined, of which the following were adulterated: 1 sample of ice cream below the legal standard, 1 sample of sausage containing starch in excess of 2 per cent., 1 sample of decomposed veal, 15 samples of olive oil containing foreign oil, 1 pathological specimen, submitted by a local inspector of slaughtering, and 4 samples of vinegar low in acid.

There were 38 drugs examined, of which the following were adulterated: 2 samples of camphorated oil, 8 samples of spirit of nitrous ether, and 1 sample of potassium iodide solution, deficient in the active ingredient.

The police departments submitted 7 samples of liquor and 27 samples of poisons for examination.

There were 28 convictions for violation of the laws, $795 in fines being imposed. John Bourgault, on two counts, and John E. Sibley, both of Winchendon, Dana H. Elkins of Cochituate, the Greek Milk Company of Peabody, Anthony Hatch of Cliftondale, Joseph W. Nolin of Lowell, Michael Torosian, on two counts, and Isaac Uretsky, on two counts, both of Milford, Thomas Wrenn of Norwood, and Charles H. Wells of Everett were convicted for violation of the milk laws. The Greek Milk Company of Peabody and Dana H. Elkins of Cochituate appealed their cases. The Beacon Grocery Company, Nathan Cohen, George Armanis, G. Jaris Company, Anastasias L. Mihaloplos, on two counts, Charles Scoulikas and Constantino Spiropoulos, all of Boston, and Galtano DiStefano of Lawrence, were convicted for violation of the food laws. George Armanis and Charles

Scoulikas of Boston appealed their cases. Charles M. Billings of Salem was convicted for violation of the drug laws. Abraham Rosenberg, Wilson & Co. and Armour & Co., on three counts, all of Boston, were convicted for violation of the cold-storage laws.

There were 10 confiscations made, consisting of 3,284 pounds of decomposed beef, 1,862 pounds of decomposed veal, 150 pounds of decomposed bologna, 544 pounds of beef infected with pyemia, 15 pounds of tainted calves' liver, 10 pounds of tainted calves' lungs, 380 pounds of tainted veal, and 75 pounds of tainted miscellaneous meats.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

One sample of milk containing added water, produced by Henry Brown of Newburyport; 2 samples of milk containing added water, produced by Manuel Brogga of Dartmouth; 1 sample of skimmed milk not properly labeled, produced by Artemus L. Morrow of Braintree; 5 samples of milk containing added water, produced by Isaac Uretsky of Milford; 3 samples of milk containing added water, produced by Nicholas Witchi of Foxborough; 1 sample of milk containing added water, produced by Manuel Nunes of North Dartmouth; 1 sample of skimmed milk not properly labeled, produced by Benjamin W. Shaw of Weymouth; 2 samples of milk containing added water, produced by Jos. A. Govenor of Wrentham; 12 samples of milk containing added water and 1 sample of skimmed milk not properly labeled, produced by Archie Dunn of South Dartmouth; 1 sample of sausage containing starch in excess of 2 per cent., from Darling Company of Worcester; 1 sample of vinegar low in acid, from D. E. Mowry Company of Milford; 1 sample of vinegar low in acid, from Baker of West Acton; and the following brands of olive oil containing foreign oil: Pericles Brand, put up by E. G. Sophos of Lowell; Extra I Brand, packed expressly for Garra & Trusso, New York; Hellenic Ideal Brand; Marca Depositata Brand; and Kilkis Brand.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of April, 1918: 8,049,683 dozens of case eggs, 115,971 pounds of broken-out eggs, 915,049½ pounds of butter, 255,498 pounds of poultry, 612 pounds of game, 14,464,592 pounds of fresh meat and fresh meat products, and 5,184,534 pounds of fresh food fish.

There was on hand in storage on May 1, 1918, 8,021,064 dozens of case eggs, 410,576 pounds of broken-out eggs, and 1,828,981½ pounds of butter.

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF MAY, 1918.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of May, 1918: —

|  | Number of Examinations. | Diagnosis. |  | Release. |  |
|---|---|---|---|---|---|
|  |  | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, . . . | 819 | 110 | 347 | 117 | 245 |

|  | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, . . . . . | 443 | 119 | 324 |  |
| *Typhoid fever (Widal test), . . | 99 | 16 | 79 | 4 |
| Typhoid fever (culture test), . . | 26 | – | 26 |  |
| Malaria, . . . . . . | 4 | – | 4 |  |
| Gonorrhœa, . . . . . . | 211 | 35 | 176 |  |
| Miscellaneous, . . . . . | 60 |  |  |  |

Total number of examinations made, 1,662.

## RÉSUMÉ OF COMMUNICABLE DISEASES FOR MAY, 1918.

### General Prevalence.

During the month of May there were reported 14,901 cases of communicable disease, an increase of 3,490 over the corresponding month for 1917, with a case rate per 100,000 population of 380 for May, 1918, as compared with 296.5 for May, 1917.

The increase was due in a large measure to the increased reporting of cases of measles and whooping cough.

*Epidemic cerebrospinal meningitis* occurred less frequently during May than the previous month, the number of cases for May being 35 as compared with 67 for the preceding month. These cases occurred chiefly in the more densely populated cities and towns, and the source of infection was, for the most part, unknown.

The desirability of lumbar puncture for diagnosis and the intraspinal injection of anti-meningitis serum for all suitable cases is, of course, apparent.

*Lobar pneumonia* was reported in 563 cases during the month of May.

*Smallpox.* — There were but 3 cases of smallpox reported during the month. Two cases occurred in Boston, both probably infected from an unknown person in a lodging house. The third case occurred in Lynn, for which no source of infection could be found.

*Scarlet Fever.* — A small outbreak occurred in the western part of the State, with a total of 46 cases. With commendable promptness, efficient isolation and quarantine were established, with the result that the outbreak was stopped in its incipiency.

In one town, reporting 17 cases, the source was probably due to infected milk. A boy employed capping milk bottles worked with sore throat, headache and chills, and within the next week 16 cases occurred in families using milk from this source. The source of the boy's infection was unknown.

*Measles.* — The total number of cases reported for the month reaches 6,334. This figure speaks eloquently of the lack of efficient isolation of active cases, and the seeming neglect of contacts, who in many instances have no supervision until they come down with the infection. It might be suggested that a more careful supervision of all known contacts, and the careful treatment of those affected, be carried out.

*Whooping Cough.* — As compared with the corresponding month of 1917 we find an increase of 646 cases, the total for May, 1917, being 355, and for May, 1918, 1,001. Part of this increase may be accounted for by better reporting on the part of physicians, but that the incidence has increased there can be no doubt.

*Venereal Diseases.* — Reports of venereal diseases begin to show the wide prevalence of these conditions throughout the State. With our reports admittedly incomplete, there have been reported 2,651 cases of gonorrhœa and 1,141 cases of syphilis since Feb. 1, 1918.

With these facts before us we feel that there is sufficient evidence to prove to the most skeptical person that the prevalence of gonorrhœa and syphilis is sufficient to warrant a strenuous endeavor to combat these diseases and the conditions which favor their occurrence.

## RARE DISEASES.

*Anterior poliomyelitis* was reported from Barre, 1; Boston, 1; Cambridge, 1; Framingham, 2; and Revere, 1; total, 6.

*Dog bite* was reported from Barre, 3; and Boston, 3; total, 6.

*Epidemic cerebrospinal meningitis* was reported from Blackstone, 1; Boston, 8; Braintree, 1; Cambridge, 2; Camp Devens, 2; Fall River, 2; Fitchburg, 1; Lowell, 2; Lynn, 1; New Bedford, 1; Newburyport, 1; Newton, 1; Northbridge, 1; Pittsfield, 1; Quincy, 1; Revere, 1; Somerville, 1; Taunton, 1; Watertown, 1; West Springfield, 1; Winchendon, 1; and Worcester, 3; total, 35.

*Malaria* was reported from Boston, 2; and Lynn, 2; total, 4.

*Pellagra* was reported from Boston, 1; Chelsea, 1; Foxborough, 1; total, 3.

*Septic sore throat* was reported from Boston, 5; Cambridge, 1; Chelsea, 1; Everett, 1; Framingham, 1; Medford, 1; total, 10.

*Smallpox* was reported from Boston, 2; and Lynn, 1; total, 3.

*Tetanus* was reported from Lawrence, 1; Springfield, 1; and Taunton, 1; total, 3.

*Trachoma* was reported from Boston, 5; Cambridge, 1; Concord, 1; Lowell, 1; and Worcester, 1; total, 9.

*Typhus fever* was reported from Chelsea, 1.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | April, 1918. | May, 1918. | May, 1917. |
|---|---|---|---|
| Total cases, | 14,740 | 14,899 | 11,411 |
| Case rate per 100,000 population, | 375.9 | 380.0 | 296.5 |

### *Certain Prevalent Diseases.*

| | April, 1918. | May, 1918. | May, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[1] | | |
|---|---|---|---|---|---|---|
| | | | | Cambridge, | (27) | 46 |
| Diphtheria: — | | | | Chelsea, | (6) | 12 |
| Total cases, | 667 | 663 | 876 | Haverhill, | (7) | 15 |
| Case rate per 100,000 population, | 17.0 | 16.9 | 22.8 | Newton, | (3) | 16 |
| | | | | Gardner, | (0) | 11 |
| | | | | Templeton, | (0) | 10 |
| | | | | Dartmouth, | (2) | 23 |
| | | | | Boston, | (926) | 1,401 |
| | | | | Brookline, | (22) | 94 |
| | | | | Cambridge, | (182) | 385 |
| | | | | Hingham, | (0) | 54 |
| | | | | Norwood, | (3) | 44 |
| | | | | Quincy, | (37) | 114 |
| | | | | Beverly, | (4) | 20 |
| | | | | Chelsea, | (33) | 76 |
| | | | | Haverhill, | (17) | 86 |
| | | | | Salem, | (16) | 204 |
| | | | | Somerville, | (52) | 181 |
| | | | | Natick, | (3) | 84 |
| | | | | Springfield, | (101) | 212 |
| | | | | Cohasset, | (0) | 21 |
| Measles: — | | | | Foxborough, | (2) | 35 |
| Total cases, | 5,210 | 6,334 | 4,234 | Georgetown, | (0) | 28 |
| Case rate per 100,000 population, | 132.9 | 161.5 | 110.0 | Lynn, | (26) | 76 |
| | | | | Malden, | (84) | 277 |
| | | | | Stoneham, | (2) | 78 |
| | | | | Swampscott, | (3) | 61 |
| | | | | Andover, | (4) | 20 |
| | | | | Chelmsford, | (10) | 54 |
| | | | | Dracut, | (0) | 34 |
| | | | | Lawrence, | (30) | 682 |
| | | | | Lowell, | (78) | 105 |
| | | | | Medford, | (29) | 60 |
| | | | | Methuen, | (9) | 110 |
| | | | | Waltham, | (21) | 239 |
| | | | | Westford, | (0) | 64 |
| | | | | Milford, | (2) | 70 |
| | | | | Upton, | (0) | 41 |
| | | | | Westborough, | (1) | 58 |
| | | | | Ludlow, | (1) | 41 |
| Scarlet fever: — | | | | Erving, | (1) | 8 |
| Total cases, | 626 | 487 | 567 | Gill, | (0) | 14 |
| Case rate per 100,000 population, | 16.0 | 12.4 | 14.7 | Montague, | (1) | 24 |
| | | | | Pittsfield, | (9) | 19 |

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[1] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

## *Certain Prevalent Diseases* — Concluded.

| | April, 1918. | May, 1918. | May, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes. |
|---|---|---|---|---|
| Typhoid fever: — | | | | |
| Total cases, . . . . . . | 52 | 70 | 66 | |
| Case rate per 100,000 population, . | 1.3 | 1.8 | 1.7 | |
| Whooping cough: — | | | | |
| Total cases, . . . . . . | 855 | 1,001 | 355 | Middleborough, . (1) 30<br>Taunton, . . (1) 17<br>Avon, . . . (0) 44<br>Boston, . . . (145) 232<br>Brookline, . . (7) 30<br>Hingham, . . (0) 17<br>Whitman, . . (0) 56<br>Newburyport, . (1) 17<br>Newton, . . . (4) 74<br>Winchendon, . . (1) 16 |
| Case rate per 100,000 population, . | 21.8 | 25.5 | 9.1 | |
| Tuberculosis, pulmonary: — | | | | |
| Total cases, . . . . . . | 786 | 901 | 699 | |
| Case rate per 100,000 population, . | 20.0 | 23.0 | 18.0 | |
| Tuberculosis, other forms: — | | | | |
| Total cases, . . . . . . | 86 | 81 | 68 | |
| Case rate per 100,000 population, . | 2.2 | 2.1 | 1.8 | |

## INTERSTATE RECIPROCAL NOTIFICATION IN MAY, 1918.

| Disease and Locality of Notification. | Health Authority referred to — | Why referred. |
|---|---|---|
| Trachoma: Camp Greene, N. C. | State Department of Health, Boston, Mass. | Patient discharged from Camp Greene to his home in Boston. |
| Tuberculosis: Camp Greene, N. C. | State Department of Health, Boston, Mass. | Patient discharged from Camp Greene to his home in Woburn. |
| Tuberculosis: Camp Devens, | State Department of Health, Augusta, Me. | Patient discharged from Camp Devens to his home in South Brewer, Me. |
| Tuberculosis: Camp Devens, | State Department of Health, Augusta, Me. | Patient discharged from Camp Devens to his home in Bangor, Me. |
| Tuberculosis: Camp Devens, | State Board of Health, Lansing, Mich. | Patient discharged from Camp Devens to his home in Detroit, Mich. |
| Tuberculosis: Camp Devens, | State Department of Health, Jacksonville, Fla. | Patient discharged from Camp Devens to Daytona, Fla. |
| Tuberculosis: Camp Devens, | State Department of Health, Jacksonville, Fla. | Patient discharged from Camp Devens to Miami, Fla. |
| Tuberculosis: Camp Devens, | State Department of Health, Hartford, Conn. | Patient discharged from Camp Devens to Shelton, Conn. |
| Tuberculosis: Camp Devens, | State Department of Health, Hartford, Conn. | Patient discharged from Camp Devens to his home in New Haven, Conn. |
| Tuberculosis: Camp Devens, | State Department of Health, Augusta, Me. | Patient discharged from Camp Devens to his home in Milford, Me. |
| Typhoid fever: Haverhill, . | State Board of Health, Burlington, Vt. | Patient returned ill from Middlebury, Vt.; the case was later diagnosed as typhoid fever. |
| Typhoid fever: Lakeville, . | State Board of Health, Concord, N. H. | Came from North Woodstock, N. H., about April 1. |

## OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES FOR THE MONTH OF MAY, 1918.

| Disease. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Aniline, | Laborer, dye stuff, | Hanson, | M | 36 | W |
| | Shoe worker, | Brockton, | M | 50 | W |
| | Mixer, print works, | Lawrence, | M | 50 | W |
| | Mill man, | Chicopee, | M | 32 | W |
| | Laborer, print works, | Lawrence, | M | 19 | W |
| Dermatitis, | Laborer, dye stuff, | Hanson, | M | 36 | W |
| | Laborer, | West Springfield, | M | – | W |
| | Lathe man, | Westfield, | M | – | W |
| | Spreader, | Plymouth, | F | 30 | W |
| | Kettle hand, | Holyoke, | M | 47 | W |
| Lead, | Furnace man, | Worcester, | M | 29 | W |
| | Painter, | Lynn, | M | 33 | W |
| | Printer, | Boston, | M | 31 | W |
| | Painter, | Beverly, | M | 34 | W |

## APPOINTMENTS.

Dr. Merrill E. Champion of Wollaston, State District Health Officer, has been appointed Director of the Division of Hygiene.

### New Appointments of Particular Interest in Connection with the Venereal Disease Campaign of the Massachusetts State Department of Health.

At the request of the Commissioner of Health, Capt. Alec N. Thomson, Medical Reserve Corps of the Section for Combating Venereal Diseases, Office of the Surgeon-General, War Department, has been detailed to the State Department of Health for a period of three months. Captain Thomson has had a wide experience in establishing and conducting venereal clinic activities in the army, and before he entered the service was director of the venereal clinic at the Brooklyn (New York) Dispensary. In the position of temporary chief of the subdivision of venereal diseases he will be occupied with the details of the establishment and operation of the State-approved venereal disease clinics.

The appointment of Dr. Mary A. Lakeman of Salem is also announced as epidemiologist in the subdivision of venereal diseases. Dr. Lakeman's principal activities will be the organizing and co-ordinating of follow-up systems in the State-approved venereal disease clinics.

# NEW LEGISLATION.

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## General Acts, Chapter 136.

### An Act authorizing the secretary of the commonwealth to appoint a state registrar of vital statistics.

*Be it enacted, etc., as follows:*

Section 1. The secretary of the commonwealth, subject to the approval of the governor and council, is hereby authorized to appoint a state registrar of vital statistics, who shall be a competent statistician and who shall receive from the treasury of the commonwealth an annual salary of three thousand dollars.

Section 2. The said registrar shall, under the direction of the secretary of the commonwealth, have power to enforce all provisions of law relative to the registry and return of births, marriages and deaths, with authority to prosecute in the name of the commonwealth any violations of the said provisions.

Section 3. This act shall take effect upon its passage. [*Approved April 11, 1918.*

## General Acts, Chapter 237.

### An Act relative to the dissemination by advertisement or otherwise of information concerning certain diseases.

*Be it enacted, etc., as follows:*

Section 1. Chapter three hundred and eighty-six of the acts of nineteen hundred and eight is hereby amended by adding at the end thereof the words: — nor to the printing, publishing or distribution of any matter pertaining to venereal diseases by state or municipal health authorities, — so as to read as follows: — Whoever publishes, delivers, distributes or causes to be published, delivered, or distributed, an advertisement, statement or notice, other than a label which is attached to a bottle or package of medicine, or which is contained in a sealed package of medicine, describing the causes, symptoms, details or effects of a venereal disease, or of a disease, infirmity or condition of the sexual organs, for the purpose of calling attention to or advertising a person or persons from whom, or an office or place at which, information, treatment, or advice may be obtained concerning such diseases or conditions, shall be punished by imprisonment for not more than six months or by a fine of not less than fifty nor more than five hundred dollars, or by both such fine and imprisonment. But the prohibitions of this act shall not be deemed to apply to the printing or delivering in sealed packages outside of this commonwealth of books, pamphlets, or circulars containing such advertisements; nor to newspapers printed outside of this commonwealth; nor to the printing, publishing or distribution of any matter pertaining to venereal diseases by state or municipal health authorities.

Section 2. This act shall take effect upon its passage. [*Approved May 28, 1918.*

### GENERAL ACTS, CHAPTER 243.

### AN ACT TO PROHIBIT AND PROVIDE FOR THE ABATEMENT OF CERTAIN NUISANCES ON THE SEASHORE IN CERTAIN COUNTIES.

*Be it enacted, etc., as follows:*

SECTION 1. It shall be unlawful for any person to deposit, or wilfully or negligently cause or permit to be deposited or to dispose of in such manner as to cause the same to be deposited by the action of the tide or otherwise upon the seashore within the limits of the counties of Dukes County, Barnstable or Nantucket, any mammals, alive or dead, constituting or likely to constitute a nuisance or a detriment to the health of the community. Any person violating any provision of this section shall be punished by a fine of not less than twenty nor more than five hundred dollars.

SECTION 2. The owner of any premises upon which any such mammals are deposited shall, within forty-eight hours after being notified so to do by the board of health of the city or town concerned, remove the same. In case the nuisance is not abated by the owner of the premises, or by the person causing the nuisance, the city or town, acting by its board of health, shall abate the same, and may recover the expense therefor from the person causing such nuisance or from the owner of the premises aforesaid: *provided, however*, that no owner shall be liable as such for a sum exceeding twenty-five dollars in any one year. All expenses of abatement not recoverable as aforesaid shall be paid by the county in which the same are incurred. [*Approved May 28, 1918.*

## RULES, REGULATIONS AND RECOMMENDATIONS PERTAINING TO THE BUSINESS OF SLAUGHTERING AND MEAT INSPECTION.

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Made in accordance with the provisions of section 7, chapter 90 of the Revised Laws, as amended by chapter 116 of the Acts of 1902, and by chapters 297 and 534 of the Acts of 1911: —

### SLAUGHTERHOUSES.

*Sanitation.* — The sanitary condition of slaughterhouses is controlled entirely by local boards of health. It is recommended that local authorities require slaughterhouses and the premises adjoining such establishments to be maintained in a reasonably sanitary condition.

It is recommended that the keeping of hogs near a slaughterhouse, and the feeding of hogs or other animals on the refuse of slaughterhouses, shall not be permitted on the premises of a licensed establishment.

All slaughterhouses are subject to the inspection of the agents of the State Department of Health at any time.

No animal that has died otherwise than by slaughter shall be received at any slaughterhouse except such animal that has died during transit to the slaughterhouse.

## DUTIES OF INSPECTORS.

*Inspectors.* — The inspector of slaughtering is to be nominated annually in March by the boards of health of cities (except Boston) and towns, said nomination to be approved by the State Department of Health before the appointment can be made. In all cities at least one of the inspectors of slaughtering shall be a registered veterinary surgeon.

*Duties.* — Inspectors must be present at all licensed slaughterhouses or establishments upon the days specified for slaughter on the application for license, and there carefully examine the carcasses of all animals at the time of slaughter. The carcass shall be stamped by the inspector immediately after slaughter.

*Reports.* — Inspectors shall make returns to the State Department of Health on or before the fifth day of January, April, July and October of each year, and shall state all inspections made by them during the three months preceding the first day of the said months.

In accordance with section 28 of chapter 90 of the Revised Laws, as amended by section 1 of chapter 6 of the Acts of 1911, all inspectors must report all carcasses showing lesions of the following contagious diseases to the Massachusetts Department of Animal Industry: glanders, farcy, mange, contagious pleuro-pneumonia, tuberculosis, Texas fever, foot-and-mouth disease, rinderpest, hog cholera, rabies, anthrax or anthracoid diseases, sheep scab and actinomycosis.

*Ante-mortem Inspection.* — An ante-mortem examination and inspection shall be made of all cattle, sheep and swine before they are slaughtered. All animals plainly showing on ante-mortem inspection any disease or condition that under these regulations would cause condemnations of their carcasses on post-mortem inspection shall be condemned and disposed of as provided in these regulations.

*Air Inflation.* — Carcasses, or parts of carcasses, shall not be inflated with air.

*Blood.* — No blood which comes in contact with the surface of the body of an animal, or is otherwise contaminated, shall be collected for food purposes. Only blood from animals, the carcasses of which are inspected and passed, may be used for meat food purposes. The defibrination of blood intended for food purposes shall not be performed with the hands.

## Use of Stamp and Tags.

*"Massachusetts Inspected and Passed."* — The "Massachusetts Inspected and Passed" stamp, when applied to a carcass, or any part thereof, signifies that the carcasses, meats and meat products have been inspected and passed for food under these regulations. Carcasses passing inspection should be branded as follows: —

Each side of beef, nine times, eight on the outside and one on the inside: Once on outside of neck, once on shoulder, once on shank, once on brisket, once on loin, once on flank, once on round, once on cod; on the inside, once on fat over kidney.

Each side of veal, twice, — once on outside of each quarter.

Each carcass of swine, seven times, — once on head between ears, once on outside of each quarter, once on each loin.

Each carcass of sheep or lamb, twice, — once on loin, once on croup.

*"Massachusetts Inspected and Condemned."* — A condemnation tag is to be attached to any carcass, parts of carcass, meats or organs found to be unsound, unhealthful, unwholesome or otherwise unfit for human food, and the parts or organs so tagged shall be disposed of by rendering, or otherwise so treated that they cannot be used for human food.

*In the Absence of Tanking Facilities.* — Any meat or meat products condemned at slaughterhouses which have no facilities for tanking should be freely slashed with a knife and then denatured with crude carbolic acid, kerosene or other prescribed agent, and then removed to a rendering establishment or otherwise disposed of by burial, etc.

## Interpretation and Definition of Words and Terms.

1. *Carcass.* — This word shall apply to all parts of the animal intended to be used for food.

2. *Sound Carcass.* — Carcasses and parts thereof found to be sound, healthful, wholesome and fit for human food shall be passed and marked as provided in these regulations.

3. *Unsound Carcass.* — Should any lesion of disease or other condition that would render the meat or any organ unfit for food be found on post-mortem examination, the carcass, part or organ shall be marked immediately with a tag labeled "Massachusetts Condemned."

4. *Soiled Meat.* — Due care should be taken to prevent meat and meat products from falling on the floor; and in the event of their having fallen they should be condemned, or the soiled portions removed and condemned.

5. *Primal Parts of Carcasses.* — This phrase shall mean the usual sections or cuts of the dressed carcass commonly known in the trade, such as sides, quarters, shoulders, hams, backs, bellies, etc., and beef tongues, beef livers and beef tails, before they have been cut, shredded or otherwise subdivided preliminary to use in the manufacture of meat food products.

## DISPOSAL OF DISEASED CARCASSES.

*Disposal of Diseased Carcasses and Organs.* — The carcasses or parts of carcasses of all animals slaughtered, and found to be affected with any of the diseases or conditions named below, shall be disposed of in a manner prescribed for each disease or condition: —

1. *Vaccine Animals.* — Vaccine animals with unhealed lesions accompanied by fever, provided they have not been exposed to any infectious or contagious disease, may be used for lard or tallow; otherwise they shall be condemned.

2. *Immature Veal.* — A careful inspection shall be made of all calves at the time of slaughter. Any calf less than four weeks old, or weighing less than 40 pounds when dressed, with head, feet, hide and entrails removed, shall not be stamped, as the sale of such carcasses is unlawful and prohibited. Carcasses of animals too immature to produce wholesome meat, and all unborn and stillborn animals, shall be condemned.

3. *Anthrax or Charbon.* — All carcasses showing lesions of anthrax or charbon, regardless of the extent of the disease, and including the hide, hoofs, horns, viscera, fat, blood and all other portions of the animal, shall be condemned and immediately incinerated, and the facts reported at once to the State Department of Health and to the Massachusetts Department of Animal Industry.

4. *Blackleg.* — Carcasses of animals showing lesions of blackleg shall be condemned.

5. *Hemorrhagic Septicæmia.* — Carcasses of animals affected with hemorrhagic septicæmia shall be condemned.

6. *Pyæmia and Septicæmia.* — Carcasses showing lesions of pyæmia or septicæmia shall be condemned.

7. *Rabies.* — Carcasses of animals which showed symptoms of rabies before slaughter shall be condemned.

8. *Tetanus.* — Carcasses of animals which showed symptoms of tetanus before slaughter shall be condemned.

9. *Malignant Epizoötic Catarrh.* — Carcasses of animals affected with malignant epizoötic catarrh, showing generalized inflammation of the mucous membrane, shall be condemned.

10. *Hog Cholera and Swine Plague.* — Carcasses showing well-marked lesions of hog cholera or swine plague in more than two of the organs (skin, kidneys, bones, lymphatic glands) shall be condemned.

Provided they are well nourished, carcasses showing slight and limited lesions of these diseases may be passed.

Carcasses showing lesions of these diseases so numerous and advanced as to prohibit their being passed, but not sufficient to cause condemnation, may be rendered into lard by cooking by steam for four hours at 220° F.

In inspecting carcasses showing lesions of hog cholera or swine plague in the skin, bones, kidneys or lymphatic glands, due consideration should be given to the extent and severity of the lesions in the viscera.

11. *Actinomycosis, or Lumpy Jaw.* — If a carcass affected with actinomycosis or lumpy jaw is in a well-nourished condition, and the lesions are confined to the head or tongue, the carcass may be passed, but the head and tongue shall be condemned.

Carcasses of animals showing generalized actinomycosis shall be condemned.

12. *Caseous Lymphadenitis.* — When the lesions of caseous lymphadenitis (cheesy lymph glands) are limited to the superficial glands, or a few nodules in an organ, the meat may be passed. If extensive lesions are found in the lungs or pluræ, or any of the visceral organs, and the carcass is emaciated, it shall be condemned.

13. *Tuberculosis.* — The following principles are advised for guidance in passing on carcasses affected with tuberculosis: —

Fundamental Thought (Principle A): The fundamental thought is that meat should not be used for food if it contains tubercle bacilli; if there is a reasonable possibility that it may contain tubercle bacilli; or if it is impregnated with toxic substances of tuberculosis or septic infections.

Lesions Localized and not Numerous (Principle B): If the lesions are localized and not numerous, if there is no evidence of tubercle bacilli in the blood, muscles or parts that may be eaten, and the carcass is well nourished, there is no proof that the flesh is unwholesome, and the carcass may, therefore, be passed.

Generalized Tuberculosis (Principle C): Evidences of generalized tuberculosis are to be sought in such distribution and number of tubercular lesions as can be explained only upon the supposition that tubercle bacilli are in the systemic circulation. Such lesions will be found in both lungs, spleen, kidneys, bones, joints, sexual glands, lymphatic glands, or in the splenic, renal, prescapular, poplitea and inguinal glands. When several of these organs or parts are coincidentally affected the carcasses showing these lesions shall be condemned.

Localized Tuberculosis (Principle D): By localized tuberculosis is understood tuberculosis limited to a single or several parts or organs of a body without evidence of bacilli invasion of the systemic circulation.

Rules for Disposal of Tuberculous Meat (Rule A): (*a*) when a tuberculous animal shows symptoms of the disease with fever, before it was killed, the carcass shall be condemned.

(*b*) When the animal shows tuberculosis by symptoms of anæmia and emaciation, the carcass shall be condemned.

(*c*) When the lesions of tuberculosis are generalized as follows: when tuberculous lesions are found in any two organs of the digestive or respiratory tracts, including the lymphatic glands, spleen, kidney, uterus, udder, ovary, testicle, adrenal gland, brain or spinal cord, such carcass shall be condemned.

(*d*) When the lesions of tuberculosis are found in the muscles, bones or joints, or in the body of lymphatic glands as a result of draining the muscles, bones and joints, the carcass shall be condemned.

(*e*) When the lesions are extensive in one or both body cavities, the carcass shall be condemned.

(*f*) When the lesions are multiple, acute and actively progressive, the carcass shall be condemned.

Parts of Carcass condemned (Rule B): An organ or part of a carcass shall be condemned —

(*a*) When it contains lesions of tuberculosis.

(*b*) When the lesion is adjacent to the flesh.

(*c*) When contaminated by tuberculous material through contact with the floor, soiled knife or otherwise.

(*d*) When heads show lesions of tuberculosis.

(*e*) When the corresponding lymphatic gland of an organ is tuberculous.

Carcass passed (Rule C): The carcass, if the tuberculous lesions are limited to a single part or organ, shall be passed after the parts containing the local lesions are removed and condemned.

14. *Texas Fever.* — Carcasses showing lesions sufficient to warrant the diagnosis of Texas fever shall be condemned.

15. *Mange or Scab.* — Carcasses of animals affected with mange or scab in advanced stages, or showing emaciation or extension of the inflammation to the flesh, shall be condemned. When the disease is slight the carcass may be passed.

16. *Tapeworm Cysts.* — Carcasses of animals affected with tapeworm cysts should be rendered into lard or tallow. When the infestation is extensive the carcass shall be condemned.

Carcasses of animals affected with gid bladder worms may be passed after condemnation of the infected organ (brain, spinal cord).

Carcasses or parts of carcasses infested with the hydatid cyst may be passed after condemnation of the affected part or organ.

## INFECTIONS THAT MAY CAUSE MEAT POISONING.

Carcasses of animals so infected that consumption of the meat, or meat food products, may give rise to meat poisoning shall be condemned. This section covers all carcasses showing signs of —

(*a*) Acute inflammation of the lungs, pluræ, peritoneum, pericardium or meninges.

(*b*) Septicæmia or pyæmia, whether puerperal or traumatic.

(*c*) Severe hemorrhagic or gangrenous enteritis or gastritis.

(*d*) Acute diffuse metritis or mamitis (garget).

(*e*) Polyarthritis (inflammation of joints).

(*f*) Phlebitis of umbilical veins.

(*g*) Traumatic pericarditis.

*Icterus.* — Carcasses affected with icterus (jaundice), and showing an intense yellow or greenish yellow discoloration after proper cooling, shall be condemned. If such a discoloration passes away during cooling the carcasses may be passed.

*Uræmia and Sexual Odor.* — Carcasses giving off such odors shall be condemned.

*Urticaria, etc.* — Hogs affected with urticaria (diamond skin disease) may be passed after condemning the skin, provided the carcass is otherwise fit for food.

*Tumors, Bruises, Abscesses, etc.* — Any organ or part of a carcass which is badly bruised, or is affected by tumors, malignant or benign abscesses, suppurating sores or liver flukes, shall be condemned. When the lesions affect the whole carcass the entire carcass shall be condemned.

The carcasses, or any part or product thereof, of all animals which have come to their death in any manner or by any means otherwise than by slaughter or killing while in a healthy condition shall be condemned as being unfit for food, and shall be disposed of either by burial or rendering.

*Emaciation and Anæmia.* — Carcasses of animals too emaciated or anæmic to produce wholesome meat, and carcasses showing slimy degeneration of the fat, or a serious infiltration of the muscles, shall be condemned.

*Milk Fever, Railroad Sickness.* — Carcasses of animals showing symptoms of milk fever or railroad sickness at the time of slaughter shall be condemned, as the flesh of such animals is dark in color and more watery than is natural, suggesting autointoxication.

Approved in council May 15, 1918.
E. F. Hamlin,
*Executive Secretary.*

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, | 3,920,988 | 434 | 1 | 667 | 68 | 67 | 34 | 2,411 | 4 | 1195 | 585 | 5,210 | 79 |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, | 793,471 | 86 | – | 240 | 26 | 21 | 11 | 187 | – | 103 | 131 | 1,414 | 24 |
| 4 | Cities, 150,000–200,000. | | | | | | | | | | | | | |
| 5 | Worcester, | 173,419 | 16 | 1 | 19 | 3 | 9 | 9 | 57 | – | 133 | 52 | 31 | 1 |
| 6 | Cities, 100,000–150,000. | *578,593* | *73* | – | *113* | *6* | *13* | *4* | *115* | – | *196* | *79* | *585* | *6* |
| 7 | Fall River, | 128,317 | 13 | – | 9 | – | 2 | 2 | 6 | – | 37 | 8 | 18 | – |
| 8 | New Bedford, | 117,855 | 17 | – | 6 | 1 | 1 | – | 1 | – | 33 | 14 | 36 | – |
| 9 | Springfield, | 111,983 | 20 | – | 23 | 4 | – | – | 22 | – | 61 | 24 | 209 | 3 |
| 10 | Cambridge, | 111,379 | 21 | – | 70 | – | 7 | 1 | 77 | – | 42 | 16 | 271 | 2 |
| 11 | Lowell, | 109,059 | 2 | – | 5 | 1 | 3 | 1 | 9 | – | 23 | 17 | 51 | 1 |
| 12 | Cities, 50,000–100,000. | *569,719* | *41* | – | *110* | *16* | *6* | *2* | *327* | – | *234* | *81* | *917* | *14* |
| 13 | Lynn, | 99,952 | – | – | 14 | 1 | – | – | 101 | – | 33 | 13 | 31 | – |
| 14 | Lawrence, | 93,060 | 3 | – | 15 | 5 | 2 | 1 | 3 | – | 27 | 12 | 174 | 6 |
| 15 | Somerville, | 93,026 | 4 | – | 23 | 4 | – | – | 48 | – | 26 | 11 | 219 | 2 |
| 16 | Brockton, | 65,746 | 15 | – | 5 | 1 | – | – | 118 | – | 21 | 9 | 54 | – |
| 17 | Holyoke, | 62,796 | 10 | – | 8 | 1 | 1 | 1 | 2 | – | 31 | 5 | 15 | – |
| 18 | Haverhill, | 52,873 | 2 | – | 9 | 1 | – | – | 20 | – | 45 | 10 | 187 | 2 |
| 19 | Malden, | 51,798 | 3 | – | 22 | 3 | 1 | – | 27 | – | 13 | 8 | 72 | – |
| 20 | Chelsea, | 50,468 | 4 | – | 14 | – | 2 | – | 8 | – | 38 | 13 | 165 | 4 |
| 21 | Cities and Towns, 25,000–50,000. | *487,764* | *61* | – | *65* | *4* | *5* | – | *487* | *1* | *97* | *42* | *819* | *13* |
| 22 | Quincy, | 45,827 | 10 | – | 9 | 1 | – | – | 53 | – | 9 | 7 | 161 | 3 |
| 23 | Newton, | 45,234 | 6 | – | 6 | – | – | – | 108 | – | 14 | 5 | 62 | – |
| 24 | Pittsfield, | 44,410 | – | – | 2 | – | 2 | – | 23 | – | 18 | 6 | 4 | – |
| 25 | Salem, | 41,082 | 1 | – | 4 | – | – | – | 18 | – | 9 | 3 | 101 | 3 |
| 26 | Fitchburg, | 40,830 | 5 | – | 3 | 1 | – | – | 33 | – | 15 | 6 | 25 | – |
| 27 | Everett, | 40,435 | 2 | – | 5 | – | – | – | 5 | – | 2 | 3 | 36 | – |
| 28 | Taunton, | 37,381 | 2 | – | 1 | – | – | – | – | – | – | 2 | 3 | – |
| 29 | Brookline, | 37,147 | 18 | – | 7 | – | – | – | 156 | – | 3 | – | 162 | – |
| 30 | Medford, | 35,230 | 6 | – | 7 | – | – | – | 17 | – | 1 | 2 | 23 | – |
| 31 | Chicopee, | 33,177 | 1 | – | 8 | 2 | – | – | – | – | 4 | 1 | 8 | – |
| 32 | Waltham, | 31,643 | 10 | – | 8 | – | 1 | – | 53 | 1 | 2 | 4 | 147 | – |
| 33 | Revere, | 29,643 | – | – | 5 | – | 2 | – | – | – | 2 | 1 | – | 3 |
| 34 | Beverly, | 25,725 | – | – | – | – | – | – | 21 | – | 18 | 2 | 87 | 4 |
| 35 | Cities and Towns, 10,000–25,000. | *575,996* | *87* | – | *58* | *6* | *3* | *1* | *540* | *1* | *147* | *94* | *597* | *15* |
| 36 | Gloucester, | 24,529 | – | – | 1 | – | – | – | 2 | – | 5 | 4 | 1 | 1 |
| 37 | Northampton, | 23,081 | 3 | – | – | – | – | – | 12 | – | 4 | 4 | 3 | – |
| 38 | North Adams, | 22,045 | – | – | – | – | – | – | 1 | – | 6 | 2 | 1 | – |
| 39 | Peabody, | 20,489 | 5 | – | 2 | 2 | – | – | 7 | – | 3 | 4 | 17 | 1 |
| 40 | Attleboro, | 19,933 | 3 | – | 1 | – | – | – | 18 | – | 4 | 2 | 13 | – |
| 41 | Westfield, | 19,929 | 15 | – | – | – | – | – | 50 | – | 20 | 9 | 4 | – |
| 42 | Watertown, | 18,851 | 2 | – | 4 | – | – | – | 5 | – | 6 | 2 | 26 | 3 |
| 43 | Framingham, | 17,728 | 2 | – | – | – | – | – | 74 | – | 8 | 3 | 10 | – |
| 44 | Leominster, | 17,688 | 1 | – | 2 | – | 1 | – | 27 | – | 7 | 2 | 10 | – |
| 45 | Melrose, | 17,627 | – | – | 1 | – | – | – | 33 | – | 5 | 5 | 7 | – |
| 46 | Gardner, | 17,451 | 2 | – | 5 | – | – | – | 35 | – | – | 1 | 4 | – |
| 47 | Arlington, | 17,264 | 1 | – | 7 | – | – | – | 25 | – | – | – | 49 | – |
| 48 | Woburn, | 17,116 | 2 | – | 6 | – | – | – | 10 | – | 2 | 4 | 31 | 1 |
| 49 | Marlboro, | 15,680 | 1 | – | – | – | – | – | 12 | – | 3 | 2 | 11 | 1 |
| 50 | Methuen, | 15,649 | – | – | – | – | – | – | 2 | – | 3 | 3 | 32 | 1 |
| 51 | Newburyport, | 15,542 | 7 | – | – | – | – | – | 3 | – | 10 | 8 | 24 | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary for addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH,[1] APRIL, 1918.

| 38A | | 38B | | 75A | | 19C | | 7 | | 28-29 | | 30-35 | | 1 | | 38C | | 37 | | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ophthalmia Neonatorum. | | Suppurative Conjunctivitis. | | Trachoma. | | Mumps. | | Scarlet Fever. | | Tuberculosis, Pulmonary. | | Tuberculosis, Other Forms. | | Typhoid Fever. | | Gonorrhœa. | | Syphilis. | | Whooping Cough. | | |
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| 155 | – | 106 | – | 10 | – | 794 | – | 626 | 9 | 783 | 527 | 86 | 78 | 52 | 7 | 835 | 1 | 415 | 16 | 855 | 54 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 48 | – | 21 | – | 7 | – | 72 | – | 113 | 1 | 225 | 122 | 22 | 17 | 6 | – | 429 | – | 213 | 6 | 252 | 20 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 20 | – | – | – | – | – | 3 | – | 17 | – | 36 | 19 | 2 | 5 | 1 | – | 38 | – | 25 | – | 11 | – | 5 |
| *28* | – | *15* | – | *2* | – | *112* | – | *47* | *2* | *133* | *118* | *19* | *19* | *11* | *3* | *112* | *1* | *56* | *1* | *91* | *4* | 6 |
| 11 | – | 5 | – | – | – | 12 | – | 6 | – | 33 | 27 | 4 | 3 | 8 | 3 | 23 | – | 13 | – | 11 | – | 7 |
| 11 | – | 3 | – | – | – | 3 | – | 6 | 1 | 40 | 30 | 8 | 4 | – | – | 26 | 1 | – | – | 10 | 2 | 8 |
| 2 | – | – | – | – | – | 82 | – | 22 | 1 | 19 | 17 | 2 | 2 | – | – | 31 | – | 15 | – | 26 | 2 | 9 |
| 3 | – | 4 | – | 1 | – | 15 | – | 7 | – | 18 | 20 | 4 | 5 | 2 | – | 20 | – | 14 | – | 36 | – | 10 |
| 1 | – | 3 | – | 1 | – | – | – | 6 | – | 23 | 24 | 1 | 5 | 1 | – | 12 | – | 14 | 1 | 8 | – | 11 |
| *29* | – | *47* | – | – | – | *70* | – | *95* | *2* | *111* | *64* | *15* | *4* | *12* | *2* | *93* | – | *37* | *2* | *129* | *6* | 12 |
| 5 | – | 31 | – | – | – | 8 | – | 21 | – | 23 | 9 | 1 | 1 | – | – | 15 | – | 9 | – | 32 | 2 | 13 |
| 1 | – | – | – | – | – | 1 | – | 2 | – | 24 | 20 | 6 | 3 | 8 | 2 | 14 | – | 9 | – | 20 | 2 | 14 |
| – | – | – | – | – | – | 5 | – | 15 | – | 17 | 7 | 2 | – | 3 | – | 7 | – | 4 | – | 13 | – | 15 |
| 7 | – | 8 | – | – | – | 37 | – | 21 | 1 | 13 | 8 | 1 | – | – | – | 15 | – | 4 | – | 35 | 1 | 16 |
| – | – | – | – | – | – | 2 | – | 4 | – | 9 | 6 | 1 | – | – | – | 11 | – | 3 | 1 | 6 | 1 | 17 |
| 5 | – | 3 | – | – | – | 11 | – | 6 | – | 12 | 5 | 2 | – | – | – | 18 | – | 5 | – | 4 | – | 18 |
| 3 | – | 1 | – | – | – | 1 | – | 13 | – | 4 | 3 | – | – | – | – | 4 | – | 2 | – | 5 | – | 19 |
| 8 | – | 4 | – | – | – | 5 | – | 13 | 1 | 9 | 6 | 2 | – | 1 | – | 9 | – | 1 | 1 | 14 | – | 20 |
| *9* | – | *5* | – | – | – | *53* | – | *73* | *1* | *101* | *40* | *10* | *10* | *8* | *1* | *47* | – | *16* | *2* | *121* | *7* | 21 |
| 1 | – | – | – | – | – | – | – | 5 | – | 8 | 3 | 1 | 1 | 1 | – | 4 | – | 1 | – | 2 | – | 22 |
| 2 | – | – | – | – | – | 8 | – | 4 | – | 10 | 3 | 3 | 2 | 1 | – | 3 | – | 2 | – | 60 | – | 23 |
| – | – | – | – | – | – | 5 | – | 17 | – | 13 | 6 | 1 | 1 | – | – | 6 | – | 3 | – | 3 | – | 24 |
| 2 | – | – | – | – | – | 5 | – | – | – | 6 | 5 | 3 | 1 | – | – | 6 | – | – | – | – | – | 25 |
| – | – | – | – | – | – | 3 | – | 5 | – | 15 | 5 | – | – | 1 | – | 6 | – | 1 | – | 7 | 3 | 26 |
| 2 | – | 2 | – | – | – | 5 | – | 8 | – | 5 | 2 | 1 | – | – | – | 6 | – | 1 | – | 16 | 1 | 27 |
| – | – | – | – | – | – | 2 | – | 7 | 1 | 13 | 4 | – | – | – | – | – | – | 3 | 1 | 2 | 1 | 28 |
| – | – | – | – | – | – | 9 | – | 7 | – | 7 | 1 | – | – | – | – | – | – | 1 | – | 12 | – | 29 |
| – | – | – | – | – | – | – | – | 15 | – | 1 | 3 | – | – | 1 | – | 3 | – | 1 | – | 7 | – | 30 |
| – | – | 1 | – | – | – | 3 | – | 2 | – | 12 | 5 | – | 2 | – | – | 3 | – | – | – | – | 1 | 31 |
| 2 | – | 1 | – | – | – | 12 | – | – | – | 4 | 3 | 1 | 3 | 1 | – | 4 | – | 2 | – | 11 | – | 32 |
| – | – | – | – | – | – | – | – | 1 | – | 4 | – | – | – | 2 | 1 | 6 | – | 1 | – | – | 1 | 33 |
| – | – | 1 | – | – | – | 1 | – | 2 | – | 3 | – | – | – | 1 | – | – | – | – | 1 | 1 | – | 34 |
| *11* | – | *2* | – | *1* | – | *195* | – | *82* | – | *83* | *42* | *8* | *11* | *4* | *1* | *35* | – | *43* | *3* | *141* | *11* | 35 |
| – | – | – | – | – | – | – | – | 1 | – | 4 | – | – | – | – | – | 6 | – | 2 | 1 | – | – | 36 |
| 1 | – | – | – | – | – | 6 | – | 1 | – | 2 | 5 | – | – | – | – | 3 | – | 16 | 1 | – | – | 37 |
| – | – | – | – | – | – | – | – | – | – | 5 | – | 2 | 1 | – | – | – | – | – | – | 3 | 1 | 38 |
| – | – | – | – | – | – | 1 | – | 7 | – | 5 | 1 | 1 | – | – | – | 1 | – | – | – | 2 | – | 39 |
| – | – | – | – | – | – | – | – | 2 | – | 2 | – | 1 | 1 | – | – | 1 | – | 2 | – | – | – | 40 |
| – | – | – | – | – | – | 22 | – | 4 | – | 2 | 5 | – | – | – | – | – | – | 1 | – | 8 | – | 41 |
| 1 | – | – | – | – | – | 1 | – | 3 | – | 5 | 2 | – | – | – | – | – | – | – | – | 16 | – | 42 |
| 1 | – | – | – | – | – | 2 | – | 2 | – | 3 | 1 | – | – | – | – | 1 | – | 1 | – | 2 | – | 43 |
| – | – | – | – | – | – | – | – | 2 | – | 6 | 3 | – | – | – | – | – | – | – | – | 18 | – | 44 |
| 3 | – | – | – | – | – | 1 | – | 2 | – | 3 | – | – | 1 | – | – | 1 | – | – | – | – | 1 | 45 |
| 1 | – | – | – | – | – | – | – | 1 | – | 4 | – | 1 | 2 | – | – | – | – | 1 | – | 17 | 2 | 46 |
| – | – | – | – | – | – | – | – | 1 | – | 12 | – | – | – | – | – | – | – | – | – | – | – | 47 |
| – | – | – | – | – | – | – | – | 5 | – | – | – | – | – | 1 | – | 1 | – | 1 | – | 5 | – | 48 |
| – | – | – | – | – | – | 2 | – | 3 | – | 6 | 1 | – | – | 1 | – | – | – | 1 | – | – | – | 49 |
| 1 | – | 1 | – | – | – | – | – | 1 | – | 2 | 2 | – | – | 1 | 1 | 1 | – | 1 | – | 11 | 1 | 50 |
| – | – | – | – | – | – | 55 | – | – | – | 2 | 3 | – | 1 | – | – | 1 | – | – | – | 7 | – | 51 |

of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them

CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | CITIES AND TOWNS GROUPED IN ORDER OF POPULATION. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 15,255 | – | – | – | 1 | – | – | – | – | 2 | 4 | 22 | 1 |
| 53 | Weymouth, | 14,659 | – | – | 2 | – | 1 | – | – | – | 2 | 2 | – | – |
| 54 | Winthrop, | 14,443 | 13 | – | 7 | – | 1 | 1 | 37 | – | 8 | 2 | 22 | 1 |
| 55 | Milford, | 14,088 | – | – | – | – | – | – | 12 | – | 3 | 5 | 49 | – |
| 56 | Greenfield, | 14,028 | 2 | – | – | – | – | – | 44 | – | 3 | 3 | 6 | – |
| 57 | Wakefield, | 13,664 | – | – | 5 | 1 | – | – | 8 | – | – | 4 | 1 | – |
| 58 | Plymouth, | 13,430 | 2 | – | 1 | – | – | – | 7 | – | 3 | – | 6 | – |
| 59 | Adams, | 13,340 | 2 | – | – | – | – | – | – | – | 4 | 2 | 3 | – |
| 60 | Clinton, | 13,266 | 3 | – | – | – | – | – | 10 | – | 7 | 4 | 40 | 1 |
| 61 | Webster, | 13,242 | – | – | – | – | – | – | 3 | – | 7 | 3 | 12 | – |
| 62 | Norwood, | 12,879 | 11 | – | 3 | – | – | – | 24 | – | 2 | 2 | 75 | 4 |
| 63 | West Springfield, | 12,696 | – | – | – | – | – | – | – | – | – | 1 | – | – |
| 64 | Danvers, | 12,309 | 1 | – | – | – | – | – | 28 | – | – | 1 | 3 | – |
| 65 | Dedham, | 12,172 | 1 | – | 1 | – | – | – | 3 | – | – | – | 5 | – |
| 66 | Natick, | 11,924 | – | – | 4 | 1 | – | – | – | – | 14 | 4 | 64 | – |
| 67 | Saugus, | 11,625 | – | – | – | – | – | – | – | – | – | – | – | – |
| 68 | Easthampton, | 10,692 | – | – | 1 | – | – | – | – | – | 2 | 1 | – | – |
| 69 | Athol, | 10,582 | – | – | – | – | – | – | 16 | 1 | – | 1 | 1 | – |
| 70 | Bridgewater, | 10,468 | – | – | 4 | 1 | – | – | 14 | – | 4 | – | – | – |
| 71 | Winchester, | 10,451 | 8 | – | – | – | – | – | 12 | – | – | – | 29 | – |
| 72 | Braintree, | 10,162 | – | – | – | – | – | – | 6 | – | – | – | 15 | – |
| 73 | Palmer, | 10,019 | – | – | 1 | – | – | – | – | – | – | – | 1 | – |
| 74 | TOWNS, 5,000–10,000. | *346,607* | *25* | – | *27* | *4* | *6* | *5* | *425* | *1* | *86* | *36* | *477* | *2* |
| 75 | TOWNS, 2,500–5,000. | *182,889* | *26* | – | *11* | *2* | *1* | – | *166* | *1* | *19* | *18* | *151* | – |
| 76 | TOWNS UNDER 2,500. | *212,530* | *18* | – | *19* | – | – | *1* | *107* | – | *16* | *27* | *181* | *2* |
| 77 | STATE INFIRMARY, | | – | – | – | – | – | – | – | – | *1* | *2* | *10* | – |
| 78 | CAMP DEVENS, | | *1* | – | *5* | *1* | *3* | *1* | – | – | *163* | *23* | *28* | *2* |

In addition to the above there occurred 6 cases of anterior poliomyelitis, 1 in Boston, 1 in Cambridge, and 1 in Springfield; 1 case of anthrax in Haverhill; 1 case of dog bite (requiring anti-rabic treatment) in Dedham, 1 in Lynn and 1 in Newton, with 1 death in Newton; 2 cases of pellagra, 1 in Cambridge 2 cases of smallpox, 1 in Chelsea and 1 at the Tewksbury State Infirmary; and 19 cases of septic sore throat, Melrose and 1 in Watertown, with 3 deaths, 2 in Leominster and 1 in Lowell.

TO THE PUBLIC HEALTH — Concluded.

| 38A Ophthalmia Neonatorum. | | 38B Suppurative Conjunctivitis. | | 75A Trachoma. | | 19C Mumps. | | 7 Scarlet Fever. | | 28–29 Tuberculosis, Pulmonary. | | 30–35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 38C Gonorrhœa. | | 37 Syphilis. | | 8 Whooping Cough. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| - | - | - | - | - | - | 1 | - | - | - | 2 | 1 | - | - | - | - | 4 | - | - | - | - | - | 52 |
| - | - | - | - | - | - | - | - | 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | 53 |
| 1 | - | - | - | - | - | 2 | - | 5 | - | 1 | 1 | - | - | - | - | - | - | - | - | 5 | - | 54 |
| - | - | - | - | - | - | - | - | 2 | - | - | - | - | 1 | - | - | - | - | - | - | 4 | - | 55 |
| - | - | 1 | - | - | - | 45 | - | 2 | - | - | 2 | - | - | - | - | 4 | - | 1 | - | 4 | 1 | 56 |
| - | - | - | - | - | - | - | - | - | - | 1 | 1 | - | - | - | - | 2 | - | 1 | - | 3 | 1 | 57 |
| - | - | - | - | 1 | - | 1 | - | - | - | - | 1 | - | 1 | - | - | - | - | 1 | - | 3 | - | 58 |
| - | - | - | - | - | - | 2 | - | 14 | - | 2 | 2 | - | - | - | - | - | - | - | - | 6 | 1 | 59 |
| - | - | - | - | - | - | 1 | - | 3 | - | 5 | - | - | - | - | - | - | - | - | - | 3 | - | 60 |
| 2 | - | - | - | - | - | - | - | - | - | 3 | 1 | - | - | 1 | - | 1 | - | 1 | - | 1 | - | 61 |
| - | - | - | - | - | - | - | - | 2 | - | - | 1 | 1 | 1 | - | - | 1 | - | - | - | 5 | - | 62 |
| - | - | - | - | - | - | - | - | - | - | - | 2 | - | - | - | - | - | - | - | 1 | - | - | 63 |
| - | - | - | - | - | - | 35 | - | - | - | 1 | 1 | - | - | - | - | - | - | 7 | - | - | - | 64 |
| - | - | - | - | - | - | 6 | - | - | - | 2 | 2 | 1 | - | - | - | 1 | - | - | - | 3 | - | 65 |
| - | - | - | - | - | - | 4 | - | 10 | - | - | - | - | - | - | - | - | - | 4 | - | 3 | - | 66 |
| - | - | - | - | - | - | - | - | - | - | 1 | 2 | 1 | - | - | - | 1 | - | 1 | - | - | 2 | 67 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 68 |
| - | - | - | - | - | - | 4 | - | 3 | - | - | - | - | - | - | - | - | - | - | - | 1 | - | 69 |
| - | - | - | - | - | - | 2 | - | 3 | - | - | 1 | - | 1 | - | - | - | - | - | - | 10 | - | 70 |
| - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | 2 | - | 1 | - | 1 | - | 71 |
| - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 72 |
| - | - | - | - | - | - | - | - | 2 | - | - | 1 | - | 1 | - | - | 2 | - | - | - | - | 1 | 73 |
| *5* | - | *16* | - | - | - | *78* | - | *37* | *1* | *52* | *29* | *6* | *5* | *5* | - | *20* | - | *4* | *1* | *80* | *2* | 74 |
| *3* | - | - | - | - | - | *38* | - | *119* | *1* | *7* | *15* | *1* | *3* | *1* | - | *11* | - | *8* | - | *17* | *3* | 75 |
| *1* | - | - | - | - | - | *30* | - | *25* | *1* | *16* | *38* | *2* | *2* | *4* | - | *35* | - | *2* | - | *13* | *1* | 76 |
| *1* | - | - | - | - | - | - | - | - | - | *19* | *40* | *1* | *2* | - | - | *15* | - | *11* | *2* | - | - | 77 |
| - | - | - | - | - | - | *143* | - | *18* | - | - | - | - | - | - | - | - | - | - | - | - | - | 78 |

1 in Lowell, 1 in Medford, 1 in Methuen and 1 in Springfield, with 3 deaths, 1 in Cambridge, 1 in Lowell in Charlton; 2 deaths from dysentery, 1 in Fall River and 1 in Melrose; 5 cases of malaria, 1 in Boston, 2 and 1 in Northampton, with 4 deaths, 1 in Chelsea, 1 in Danvers, 1 in Northampton and 1 in Worcester; 2 in Boston, 1 in Fall River, 1 in Haverhill, 9 in Holliston, 1 in Lenox, 2 in Leominster, 1 in Lowell, 1 in

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner of Health, EUGENE R. KELLEY, M.D.

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EUGENE R. KELLEY, M.D., *Chairman.*

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|---|---|
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| | |
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| The Eastern District, | RUSSELL B. SPRAGUE, M.D., Boston. |
| The Northeastern District, | LYMAN A. JONES, M.D., Swampscott. |
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| The Berkshire District, | HOWARD A. STREETER, M.D., Pittsfield. |

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[1] Leave of absence, military service.

# THE COMMONHEALTH

Volume 5 Number 7

JULY, 1918

ISSUED MONTHLY

BY

## THE STATE DEPARTMENT OF HEALTH
## OF MASSACHUSETTS

EUGENE R. KELLEY, M.D., *Commissioner*

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approved by the
Supervisor of Administration.

# VENEREAL DISEASES AND INDUSTRY.

By Alec Nicol Thomson, Major, M.R.C., Chief, Subdivision of Venereal Diseases, Massachusetts State Department of Health.

THE war has forced on us the necessity of facing and striving to solve many problems hitherto evaded or not recognized in their true light. Foremost among these stands venereal disease, — that age-old curse of society.

Gonorrhea and syphilis have swept all the European armies like a plague, often doing more damage to military effectiveness than all the engines of death combined. Regiments are known to have fought through some of the bloodiest battles of the whole war only to find, on returning to their recuperation station, that they were better off for effectiveness than some of the regiments which had not gone into action at all. On reckoning the losses due to eighteen months of fighting, one of the contending nations discovered that venereal disease had incapacitated more men than had the enemy.

With the ever-increasing demand for man-power in the field and at home, the need for some remedy for venereal disease was forced on all belligerents.

The United States developed as its remedy something 100 per cent. American in conception and execution, — the Commission on Training Camp Activities, — a brand new departure in making war. The result has been that our army to-day has the lowest venereal disease rate in history.

This war, however, is not one of field armies alone, it is a conflict of nations. The *working* force must be fully as efficient as the *fighting* force.

The first draft has shown that an alarming amount of venereal disease is prevalent everywhere, and that it is a most important factor in civilian disability. One of the great tasks of the Commission on Training Camp Activities, in its general work of fighting venereal disease, has to do, therefore, with venereal disease in industry.

The best way to accomplish this calls for the co-operation of employers, to the end that industrial plants may be used as units. An industrial program has been drawn up. This is, to quote a leading magazine, "unquestionably . . . in the forefront of all efforts for the essential upbuilding of the health of labor." It calls for the co-operation of employers, to the end that industrial plants may be used as units. It appeals to the employer's patriotism, to his natural desire for greater efficiency, and to his interest in his employees. Its salient points are: —

1. Distribution of literature, posting of bulletins, placards, etc.
2. Confidential interviews between employees and superintendent, foreman or other individuals intrusted with the execution of the plan.
3. Examination by competent doctors of all employees who have or think they have a venereal disease.
4. Investigation of health conditions in the families of infected married men, and provision for care of wives and children.
5. Disposition of cases for treatment either by individual physicians especially engaged, or at a hospital or plant clinic.
6. Provision for leave of absence with pay for employees who are in the infectious stage of a venereal disease, with the requirement that they report daily to the superintendent or foreman.
7. A certificate of each treatment signed by the treating physician should be required of every patient.
8. Patients who have been pronounced cured of gonorrhea should be required to undergo examination at least once a month for three months after having been discharged from the doctor's care.
9. Few cases of syphilis can be cured in less than several years' time; but they will cease to be infectious and dangerous to others as soon as all lesions and sores on the skin and mucous membranes have been healed. All cases should have a blood test made at least once, and better twice, a year for the rest of their lives.

This scheme meets, in a practical way, two fundamental reasons for the prevalence of syphilis and gonorrhea, *i.e.*, ignorance and lack of proper treatment.

Plans are now in formation — at the section on men's work of the commission, 105 West 40th Street, New York — to send this program broadcast over the country, with the end in view of reaching every employer of labor of any consequence, and, through him, his employees.

The commission deserves the co-operation of every local and State board of health for the practical development of the medical features of this program. Already such representative boards as the Massachusetts State Department of Health and the State Board of Health of Minnesota have recognized the opportunity for co-ordinating and making more effective their work, and have organized to assist the employers of their respective States. To attain the maximum results their action should be followed in every State and by as many local boards as possible. The commission is ready to co-operate. The present time offers a unique opportunity to insure the success of this great movement.

Recognizing that the first need of workers generally is some definite information on the whole subject of venereal diseases, the following educational material was designed: —

A. A placard, easy to read and to the point. Several of the largest industries in the country have translated this placard into foreign languages.

## BEWARE!

VENEREAL DISEASES (clap and syphilis) are ruining the health and lives of tens of thousands of men, women and children. They are among the most important causes of insanity, blindness, paralysis, impotence, barrenness, miscarriages and many terrible diseases called by other names — they are hard to cure and are sometimes incurable.

They are causing sickness and inefficiency in this plant — *they must be wiped out!*

### Keep Away from Prostitutes

### PRICED AND PRIVATE

Most cases of clap and syphilis come from sexual intercourse with prostitutes (whores). Seventy per cent. of all "loose women" have both. Keep away from them — don't risk your health and perhaps your whole future.

If you should be foolish enough to get caught — DON'T FALL for advertising doctors. Go to a good physician, or ask the plant superintendent for advice — he'll be glad to help you in private.

POSTED BY

At the suggestion of the
War Department Commission on Training Camp Activities

B. A folder, entitled "Your Job and Your Future," to be given to every man. It hits between the eyes, is readable and tremendously popular.

The following quotation from the folder will give an idea of its subject matter: —

> **"You can't go far if you don't keep fit."**
>
> **It's up to you**
>
> YOU WANT TO GET AHEAD. You want to make more money.
>
> If you do good work in your present job, you *will* get ahead.
>
> But you can't do good work now or any time unless you keep well — good health is the foundation of all good work.
>
> One of the worst causes of sickness is venereal diseases — gonorrhea (clap, dose, chordee, stricture) and syphilis (syph, pox).
>
> You have heard of these diseases. They are very common. Because they are common, many people think they are not serious. You have heard that a "dose" is no worse than a bad cold and that a couple of shots of mercury will cure a case of "syph."
>
> **Yet these are two of the worst diseases known to man.**

C. A series of enclosures for pay envelopes. These are all very aphoristic. They serve as "short arm jabs" to get to those individuals who will not heed anything else. Also, they keep the entire subject alive.

> GONORRHEA is a thousand times worse than a bad cold — if not treated early by a good doctor it can become incurable.

In addition to these, the desirability is indicated of using moving-picture films, lectures, and follow-up methods generally. The section on men's work is prepared to go into these phases further, to advise regarding local problems.

Equal in importance with the need for knowledge on venereal diseases is the need for adequate treatment of them. This will be more than ever true as the commission's campaign "uncovers" the cases.

The industrial program is designed to supply this deficiency through making plain the absolute necessity for proper facilities. The co-operation of the plant physician, if there is one, in giving advice and making diagnoses, is shown to be essential to the success of the program.

When a plant does not possess medical facilities it is most strongly recommended that the superintendent or some other official be designated to supply advice (the necessary technical information being furnished him) and to refer the patients to some physician or clinic of known standing. The commission especially recommends the establishment of joint clinics by several factories in a community.

Because few men have realized how much venereal diseases are costing us all, the program may seem like an expensive proposition. Uncle Sam has found out how much he has lost from these diseases, however, and is passing the information on for the benefit of the country generally.

To simplify the work, a system of card records has been designed, an estimate of essential expenses for a clinic has been drawn up and educational material of a specific type has been prepared for infected persons who report for treatment. Moreover, as noted above, the co-operation of several plants in one community in establishing a joint clinic is urged both for economy and efficiency. Such a clinic, located centrally from all contributing plants, may be made of untold value to the whole community. This is particularly true where the co-operation of local and State health officers is available.

The section on men's work has under preparation a booklet for the employer. This will state briefly and clearly the reason for the work, the psychology of the various methods employed, and the importance of the employer as a dominating factor in the lives of his employees.

The booklet will sketch some of the lines for further constructive work, which the adoption of the new plan is bound to suggest if American industry is to hold its place in the forefront after the war.

Local and State health departments can do a great deal to insure the success of the venereal disease campaign.

## INDUSTRIAL NURSING IN MASSACHUSETTS.

By Anna M. Staebler, Secretary, Massachusetts Committee, Health in Industry.

THERE are approximately one hundred and twenty-five factories and stores in Massachusetts that have established some form of nursing service. Do you know what such service means to employer, employee and community?

For the employer it means economy by keeping employees physically fit. This results in cutting down absences due to illness, a decrease in accidents, and a larger output of goods.

For the employee it means maintenance of health because of immediate attention to accidents and minor ailments, resulting in an increase in his earning power. It also means for him a sanitary workshop.

For the community it means that prevention of illness is being practiced and preached among citizens who would not otherwise be reached until they are ill at home. It is more economical for any community to keep its people well than to care for them after they are ill.

Industrial nursing service is available for all classes of industries and all sizes of factories and stores.

For the large plant there is the full-time nurse, who spends her entire time in the employ of one firm. She gives first aid in surgical and medical cases and advice in personal and family difficulties. Her work is largely preventive and educational. The sanitation of the plant is under her supervision. She does follow-up work in the homes of the employees where there is illness or trouble and where she is able to apply her knowledge of public health.

For the small firm there are available two forms of service, which are arranged for advantageously by the local Visiting Nurse Association, namely, the group service, whereby adjacent plants share the time and expense of one nurse, and hourly service, which means that one of the staff visiting nurses spends one hour or more daily in one or more plants. It is obvious that these two forms of service are carried out better under such supervision.

The latter service has been established in several plants in each of the following cities and towns: Boston, Cambridge, Springfield, Gloucester and Mansfield.

In several factories where hourly service was started, the service has been increased to full time, thereby demonstrating the value of the work.

For full-time and group service, a reduction in the insurance rate is allowed.

The success of industrial nursing depends chiefly upon the personality of the nurse and her ability to do preventive work. She is endowed with the former quality, while the latter is the result of education in public health.

An industrial nurse should possess knowledge on industrial and municipal sanitation, labor laws, workmen's compensation, industrial organization and betterment, occupational diseases and health hazards, accident prevention and co-operation with boards of health and health agencies.

The nurse who has never done anything but private or hospital work needs a public health course before taking an industrial position.

Coupled with the right personality, such preparation should fit her for intelligent and satisfactory work in any factory or store.

An employer is wise in making a careful choice of nurse, for upon it depends the success or failure of the health department of his organization.

The School for Public Health Nursing, conducted by Simmons College, and the School for Social Work of Boston give courses in public health and social service to registered graduate nurses. Such a course gives a nurse a practical foundation for intelligent industrial nursing.

The advisory committee of this school consists of Dr. Edsall, dean of Harvard Medical School; Dr. Eugene R. Kelley, commissioner, Massachusetts State Department of Health; Mrs. E. A. Codman, president, Boston Instructive District Nursing Association.

Employers are realizing more than ever before the importance of conserving their man power. Contract government orders must be filled and it requires the human element behind the machine to produce the goods on time. Our soldiers cannot be trained on this side, outfitted for overseas duty, and maintained over there with the enormous and various supplies required to win the war unless the government contracts for supplies are filled on time. In order to accomplish this, the men and women in our mills must be kept in fighting trim to help win the war by producing the goods. In plants not large enough to employ a full-time physician, the nurse is unquestionably the most potent factor in maintaining the health of the employees.

## FOR WAR TIME HEALTH CONSERVATION.

An important organization was effected at the State House on July 9 when the Massachusetts Health Committee was formed to co-operate in an educational campaign with all other agencies which seek to make Uncle Sam's boys fit for fighting and to cut down the sickness and death rate for the Commonwealth.

The committee has a working fund which will enable it to carry on a vigorous campaign of lectures, exhibits, newspaper publicity and circular work. It will serve in an advisory capacity to less experienced organizations, and will try to become a clearing house for public health ideas.

The officers of the committee are as follows: Dr. Eugene R. Kelley, State Commissioner of Health, chairman; Miss Gertrude W. Peabody, vice-chairman of the Child Welfare Department of the Council of National Defense, treasurer; Prof. Charles E. Bellatty of Boston University, director.

Other members of the committee are Bishop William Lawrence, representing the Society of Social Hygiene; Dr. Edward Reynolds, director of the American Society for the Control of Cancer; Dr. G. M. Kline, director of the Massachusetts Commission on Mental Diseases; Dr. V. Y. Bowditch, president of the Massachusetts Anti-Tuberculosis League; and Dr. Richard M. Smith, member of the Child Conservation Committee of the State Department of Health.

The director is a publicity engineer of high standing. His help and advice should be of material benefit to workers for the "common health" wherever publicity problems are presented.

Headquarters will be maintained at the College of Business Administration of Boston University, 525 Boylston Street, Boston, telephone, Back Bay 8810.

All who feel that the committee can render service in their community should call for that service without hesitation.

## FOOD RULES FOR SCHOOL CHILDREN.

1. Begin the day by drinking a glass of water and drink at least six glasses during the day.
2. Do not go to school without breakfast.
3. Eat regularly three times a day.
4. Eat slowly and chew all food well.
5. Drink milk every day, — four glasses are not too much.
6. Eat some breakfast cereal every day.
7. Eat some vegetable besides potato every day.
8. Eat bread and butter every meal; dark breads are best.
9. Eat some fruit every day. Spend the pennies for apples instead of candy.
10. Do not eat candy between meals; eat candy and other sweets only at the end of a regular meal.
11. Do not drink tea or coffee; it does the body no good but does do it harm.
12. Do not eat or touch any food without first washing the hands.
13. Do not eat fruit without first washing it.

14. Do not eat with a spoon or fork which has been used by any other person without first washing it.

15. Do not drink from a glass or cup which has been used by another person without washing it.

16. Do not eat from the same dish with any other person.

## FOOD POISONING.

In food conservation work one of the most important problems is the determination of safe and unsafe foods. All the available food must be preserved and utilized, and methods must be devised which make for efficiency. This has been made a special research problem by the Department of Preventive Medicine and Hygiene of the Harvard Medical School under a grant from the National Canners Association.

During the past year an effort has been made to get in touch with outbreaks of food poisoning and infections in order that definite knowledge might be obtained as to the origin of these cases. To be of value, reports and investigations must be immediate or else little material can be obtained, and no definite conclusions can be drawn. It has been difficult to get into immediate touch with outbreaks of food sickness, and a renewed effort is being made during the second year of the work with the hope that those individuals who are in a position to do so will immediately report the occurrence of any cases of sickness attributed to food. In this problem there must be great dependence upon those who are practicing physicians or health workers, and who by the very nature of their work are the first to come in contact with such cases.

If there occurs in your community any case, or cases, which you think are attributable to food in any way, will you not telephone (charges reversed) the Department of Preventive Medicine and Hygiene, Harvard Medical School, Boston, Mass.; telephone, Brookline 2380. It is equally important that you *save* all specimens of *feces and vomitus* from the affected individuals, and as large portions as possible of *suspected foods*. An investigator will then be sent out without expense to the community, and an effort will be made to establish the cause of the trouble.

# THE COMMONHEALTH.

MONTHLY BULLETIN OF THE MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

*Sent Free to any Citizen of the State.*

MERRILL E. CHAMPION, M.D., DIRECTOR OF DIVISION OF HYGIENE, EDITOR.
Room 546, State House, Boston, Mass.

**Change of Title.** — With this issue, the health bulletin takes on a slightly altered form. The change of name is intended to emphasize our belief in the axiom that the health of all the people is a factor of fundamental importance to the prosperity and general well-being of the Commonwealth. Many grave responsibilities face us at the present time.

**Urgent Problems.** — Outstanding among them are two: the conservation of our children, and the control of venereal disease. The Massachusetts State Department of Health is attacking the problem of the children through its Division of Hygiene, assisted by an advisory committee of expert workers in the different subdivisions of this field. The venereal problem is being handled through the Division of Communicable Diseases, with its subdivision of venereal diseases. A special bulletin will appear shortly dealing in detail with what has been already done in our State in these two directions.

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**The Weighing and Measuring Campaign.** — It is gratifying to note the energy and at the same time the discrimination with which the campaign for weighing and measuring the children has been carried on. When the idea was first broached by the Federal Children's Bureau, there were many skeptics who could see no good at all in the idea. These doubters, however, overlooked the obvious educational possibilities of the project. Whatever the ultimate value of the figures compiled may be, — and this ought to be considerable, — the fact will remain that many individuals and many communities will have been awakened to the need of child conservation. This increased interest will result in increased appropriations for such work, this in time giving rise to still greater interest, and so a beneficent circle will have been established to the lasting advantage of the public health.

**The Experience of One Small Town.** — In connection with the weighing and measuring of babies it is worth while recording the experience of one small Massachusetts town. Monson reports that every child of whom the local public health nurse has knowledge was weighed and measured; in other words their campaign was 100 per cent. successful. Two hundred and three of the total number 265 were measured by physicians. Thirteen of these children were found to have physical defects. A vigorous follow-up campaign is planned.

**Financial Results of Child Conservation Campaign.** — As a result of the various forms of intensive effort directed towards child conservation in Massachusetts during the last few months, more than $45,000 have been raised to date for child conservation work in the various cities and towns of the State either through municipal or through private channels. This is being added to steadily. Many factors naturally have contributed to produce these results. Conscientious work in the past by the various associations and by boards of health has paved the way for the present intensive campaign. The credit should be shared by many; the good results will be shared by all.

# MEASLES.

By Bernard W. Carey, M.D., Epidemiologist, Massachusetts State Department of Health.

THE measles situation in this State demands some comment, for while there has been a marked decrease in the number of cases reported this month, the decrease is in all probability due to the lack of new victims rather than to the preventive measures used.

During the month of June there were reported 3,664 cases, as compared with 6,334 for the month of May, making a total for the half year of 25,647. It would seem that little or no attempt had been made, other than the isolation of the patient after the eruption had appeared, to prevent the spread of this disease, and scarcely any attempt at control of contacts or the prevention of the infection of the non-immune.

Surely it is our clear duty to impress upon those in whom the care of children has been confided that measles is not a necessary disease of childhood, and that if they allow the children to become infected because "this is a good time to have measles," or that "they might as well have measles now as later," they are assuming a risk that may bring disastrous results through the complications which arise, or even the death of the patient.

Authorities on preventive medicine are recommending that, besides the isolation of the patient, we watch with great care all children who could possibly have come in contact with a known case. It is advised that the temperature of all possible contacts be taken daily during the latter part of the incubation period, preferably after the first week of exposure, and that if a rise of one or more degrees is found, this suspected case be promptly isolated.

It has been proven that this initial rise of temperature occurs before the onset of the coryza, and as the most infective period of measles is during the pre-eruptive stage, efficient isolation at this period, a measure very seldom employed, gives us a valuable means of preventing the spread of this infection.

With the school in session it is advisable to keep all the children in school, watch the temperature of all possible contacts there, and supplement this by visitation at the homes of all absentees. This method is, perhaps, somewhat expensive, but the results are certainly well worth the time, money and effort expended.

Marked activity has been displayed during the past few months by the medical men both in national service and in civil laboratories endeavoring to rob measles of its disastrous complications. Their efforts have demonstrated that the more serious complications of measles are due to the hemolytic streptococci found in the naso-pharynx and throat of those ill with measles or in contact with measles, as, for example, the ward attendants in isolation hospitals.

From their endeavors we have been taught a valuable lesson which, if made use of, furnishes us with a preventive measure in combating the complications and sequellæ of measles.

By culturing the throat and naso-pharynx of our cases we shall be able to separate those whose throats are "clean" from those infected, and, if our isolation is effective, we shall see a marked diminution of secondary infections.

The more common complications are capillary bronchitis, broncho-pneumonia, which is probably septic in origin, otitis media and enteritis with its accompanying diarrhœa.

Because of a lowered resistance children are unable to resist the invasion of the tubercle bacillus, and we find acute miliary tuberculosis, tubercular meningitis or pulmonary tuberculosis developing. Von Pirquet has shown that a child with a positive cutaneous tuberculin reaction before an attack of measles will have a negative reaction during measles, this being due to the disappearance of antibodies.

In the face of these facts, it is inconceivable that people should still hold to the view that their children "might as well have measles and get it over with." The reasonable thing would seem to be to safeguard the vitality of the children that they will be able to withstand infection accidentally acquired, and to furnish them with adequate scientific care when illness does occur.

The appended table, giving the number of cases with deaths, will prove quite conclusively that measles is not a disease to be lightly reckoned with.

| YEAR. | Number of Cases. | Deaths. |
|---|---|---|
| 1908, | 21,470 | 331 |
| 1909, | 15,060 | 157 |
| 1910, | 18,794 | 240 |
| 1911, | 16,094 | 158 |
| 1912, | 22,423 | 286 |
| 1913, | 29,192 | 315 |
| 1914, | 12,264 | 149 |
| 1915, | 22,881 | 149 |
| 1916, | 25,460 | 392 |
| 1917, | 23,880 | 372 |
| 1918 (six months), | 25,647 | 325[1] |

[1] Five months.

## REPORT OF DIVISION OF FOOD AND DRUGS.

During the month of June, 1918, samples were collected in 52 cities and towns.

There were 1,043 samples of milk examined, of which 312 were below the legal standard, 40 samples were skimmed milk not properly labeled, 1 sample contained foreign dirt, and 28 samples contained added water.

There were 104 samples of food examined, of which the following were adulterated: 1 sample of wormy corn meal, 1 sample of cream below the legal standard, 3 samples of ice cream below the legal standard, 1 sample of decomposed beef, 4 samples of decomposed pork, 3 samples of olive oil containing cottonseed oil, and 1 sample of vinegar low in acid.

There were 11 samples of drugs examined, of which 3 samples of camphorated oil were deficient in the active ingredient.

The police departments submitted 19 samples of liquor and 13 samples of poisons for examination.

There were 21 convictions for violation of the laws, $708 in fines being imposed. T. Beaulieu, Frank Mastera and John M. Teixeira, all of Acushnet, Manuel Brogga of Dartmouth, Archie Dunn of Dartmouth, on two counts, Henry Brown of Newburyport, Timothy Chace of Taunton, J. A. Govenor of Wrentham and Nicholas Witchi of Foxborough were convicted for violation of the milk laws. Archie Dunn of Dartmouth appealed both of his cases. John C. Jeffers of Worcester, Emanual G. Sophos of Lowell, on three counts, Joseph D. Flione and Pantel N. Themo of Boston and Domenico Tomasetti of Lawrence were convicted for violation of the food laws. Joseph D. Flione and Pantel N. Themo of Boston appealed their cases. Louis Orlen of South Hadley, Charles Webber of Springfield, on two counts, and William Karp of Lowell were convicted for violation of the slaughtering laws.

There were 7 confiscations made, consisting of 3,110 pounds of decomposed frozen eggs, 15,552 pounds of sour beef livers, 27,858 pounds of decomposed veal, 92 pounds of tainted beef, and 108 pounds of decomposed tripe.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

Nine samples of milk containing added water, produced by Louis Abeirne of Ashland; 3 samples of milk containing added water, produced by Edward Younger of Gloucester; 2 samples of "Hellenic Ideal" brand olive oil, containing cottonseed oil, from Flione-Themo Company of Boston; 1 sample of ice cream below the legal standard, from Angelina Calestis of Revere; and 1 sample of ice cream below the legal standard, from Modestino Nigro of Revere.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of May, 1918: 8,408,073 dozens of case eggs, 273,556 pounds of broken-out eggs, 766,814½ pounds of butter, 779,025½ pounds of poultry, 242 pounds of game, 19,158,740 pounds of fresh meat and fresh meat products, and 7,159,940 pounds of fresh food fish.

There was on hand in storage on June 1, 1918, 16,047,336 dozens of case eggs, 432,609 pounds of broken-out eggs, and 798,242 pounds of butter.

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF JUNE, 1918.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of June, 1918: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, . . . | 639 | 73 | 247 | 113 | 206 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, . . . . . | 330 | 74 | 256 | |
| *Typhoid fever (Widal test), . . | 94 | 23 | 67 | 4 |
| Typhoid fever (culture test), . . | 14 | 2 | 12 | |
| Malaria, . . . . . . | 7 | – | 7 | |
| Gonorrhea, . . . . . . | 167 | 34 | 133 | |
| Miscellaneous, . . . . . | 24 | – | – | |

Total number of examinations made, 1,275.

## QUARTERLY REPORT UPON THE DISTRIBUTION OF BIOLOGICAL PRODUCTS AND DIAGNOSTIC OUTFITS.

The following gives the total number of biological products and diagnostic outfits distributed by the State Department of Health during the three months ending June, 1918: —

*Biological Products.*

| | |
|---|---|
| Diphtheria antitoxin: — | |
| 12,000 units (for the Boston City Hospital), | 1,032 bottles. |
| 12,000 units, | 115 bottles. |
| 6,000 units (for the Boston City Hospital), | 48 bottles. |
| 6,000 units, | 1,211 bottles. |
| 3,000 units, | 7,788 bottles. |
| 2,000 units (for the Boston City Hospital), | 96 bottles. |
| 2,000 units, | 2 bottles. |
| 1,000 units, | 1,993 bottles. |
| Smallpox vaccine: — | |
| Capillary tubes, | 36,240 |
| Bulk, | 2,250 |
| Typhoid vaccine: — | |
| Ampoules, | 2,381 |
| Bulk, | 3,100 |
| Typhoid-paratyphoid vaccine: — | |
| Ampoules, | 2,924 |
| Bulk, | 1,250 |
| Paratyphoid vaccine: — | |
| Ampoules, | 369 |
| Antimeningitis serum, | 1,694 bottles. |
| Silver nitrate solution: — | |
| Ampoules, | 13,182 |

*Diagnostic Outfits.*

| | |
|---|---|
| Diphtheria culture tubes, | 2,473 |
| Tuberculosis sputum bottles, | 1,409 |
| Pneumonia outfits, | 131 |
| Widal outfits, | 360 |
| Typhoid culture outfits, | 91 |
| Malaria-Gonorrhea outfits, | 202 |

# RÉSUMÉ OF COMMUNICABLE DISEASES FOR JUNE, 1918.

## General Prevalence.

There were 9,048 cases of communicable diseases reported during the month of June. This is a decrease from the previous month of 5,842, and also a decrease of 1,253 cases for the corresponding month for 1917. The case rate, per 100,000 population, for June was 230.8, as compared with 379.8 for May.

This lessened prevalence was most marked in measles (2,670 cases), lobar pneumonia (363 cases), diphtheria (190 cases), scarlet fever (198 cases) and German measles (1,580 cases).

Whooping cough continues to be reported in rather excessive amounts, 829 cases being reported for June, 1918, as compared with 328 for June, 1917.

The prevalence for the first six months (January to July) for the more common diseases was: —

| | | | |
|---|---|---|---|
| Measles, | 25,647 | Lobar pneumonia, | 4,135 |
| German measles, | 9,240 | Scarlet fever, | 3,088 |
| Pulmonary tuberculosis, | 4,598 | Other forms of tuberculosis, | 393 |
| Diphtheria, | 4,145 | Typhoid fever, | 321 |

No outbreak of importance occurred during the month. Some communities exceeded their endemic index, but not in the form of an outbreak.

*Anthrax.* — There were 3 cases of anthrax reported during the month. Two cases occurred in a tannery which had just started in business and where no provision had been made for the disinfection of the hides. Under the direction of the district health officer the owner has taken the necessary steps to prevent further infection. The other case occurred in a truck driver who was infected in a local freight house. This man, while procuring his own load, which consisted of hardware, had to move some hides which had been placed in front of the hardware, and in moving the hides became infected. The hides were imported from Hankou, China, were sun-dried and admitted to this country under a consular certificate.

*Anterior Poliomyelitis.* — There were 6 cases of anterior poliomyelitis reported in various sections of the State during June.

*Epidemic Cerebrospinal Meningitis.* — This disease was reported 36 times, occurring in widely distributed areas of the State. Many of our records show that diagnosis was made shortly before the death of the patient, and it is again recommended that spinal puncture be done early and anti-meningococcus serum administered at that time.

*Leprosy.* — Two cases of leprosy were reported, both showing positive laboratory findings. One patient, knowing that a neighboring State does not employ quarantine measures as practiced in this State, left this State and has not been apprehended. The other patient is under the care of the local authorities and has been sent to Penikese Island.

*Lobar Pneumonia.* — Lobar pneumonia shows a marked decrease for the month, the number of cases reported being 200 for June as compared with 563 for May.

*Smallpox.* — One case of smallpox was reported. The patient, a sailor on a fishing vessel, was taken ill while at sea. The vessel came to shore and his condition was diagnosed and the patient removed to a marine hospital. The vessel and crew were placed in quarantine, and all known contacts were vaccinated.

*Venereal Diseases.* — The reporting of the venereal diseases shows that the incidence of these diseases is far more prevalent than is generally believed. The figures for the month of June give us 815 cases of gonorrhea and 330 cases of syphilis reported, making a total for four and a half months of gonorrhea, 3,466, and syphilis, 1,471.

*Diphtheria.* — The number of cases of diphtheria reported shows a marked decrease for this year. Cambridge, however, has had an excessive amount, furnishing 265 cases during the past six months. It is possible that the influx of students from other communities may account for this increased prevalence, but, as the cases occurred endemically rather than epidemically, perhaps with an earlier diagnosis being made, methods of isolation and better quarantine established early and maintained, the incidence of this disease might be reduced to a far lower level than has existed for the past eighteen months.

*Measles.* — This disease again leads in the number of cases reported, but shows a decrease of 2,671 cases as compared with the month of May.

## RARE DISEASES.

*Anterior poliomyelitis* was reported from Boston, 1; Fall River, 1; Milford, 1; Northampton, 1; Somerville, 1; and Springfield, 1.

*Anthrax* was reported from Boston, 1; and Winchendon, 2.

*Dog bite requiring antirabic treatment* was reported from Methuen, 1; and North Attleborough, 1.

*Dysentery* was reported from Boston, 4.

*Epidemic cerebrospinal meningitis* was reported from Andover, 1; Boston, 14; Cambridge, 2; Camp Devens, 4; Concord, 1; Lowell, 2;

Malden, 5; Marlborough, 1; North Andover, 1; Topsfield, 1; Winchester, 1; and Worcester, 3.

*Leprosy* was reported from Boston, 2.

*Malaria* was reported from Boston, 1; Bridgewater, 1; Camp Devens, 1; Dedham, 1; and Mansfield, 1.

*Pellagra* was reported from Boxford, 1; Foxborough, 1; Northampton, 1; Taunton, 1; and Worcester, 2.

*Septic sore throat* was reported from Barnstable, 2; Boston, 1; Gill, 2; Hull, 2; Lowell, 1; Medford, 1; Newburyport, 1; Salem, 1; and Somerville, 1.

*Smallpox* was reported from Tisbury, 1.

*Tetanus* was reported from Boston, 1; Salem, 1; and Worcester, 1.

*Trachoma* was reported from Boston, 6; Cambridge, 1; Gloucester, 1; Northampton, 1; Peabody, 1; and Somerville, 1.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | May, 1918. | June, 1918. | June, 1917. |
|---|---|---|---|
| Total cases, | 14,890 | 9,048 | 10,253 |
| Case rate per 100,000 population, | 379.8 | 230.8 | 266.4 |

### *Certain Prevalent Diseases.*

| | May, 1918. | June, 1918. | June, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[1] |
|---|---|---|---|---|
| Diphtheria: — | | | | Cambridge, (25) 41<br>Winthrop, (2) 6<br>Gardner, (0) 13 |
| Total cases, | 663 | 473 | 793 | |
| Case rate per 100,000 population, | 16.9 | 12.1 | 20.6 | |
| Lobar pneumonia: — | | | | |
| Total cases, | 563 | 200 | 277 | |
| Case rate per 100,000 population, | 14.4 | 5.1 | 7.2 | |
| Measles: — | | | | Boston, (821) 909<br>Cohasset, (1) 18<br>Hingham, (0) 19<br>Milton, (4) 20<br>Norwood, (2) 37<br>Stoughton, (0) 25<br>Haverhill, (16) 57<br>Lynn, (32) 70<br>Malden, (55) 143<br>Manchester, (2) 63<br>Peabody, (12) 75<br>Salem, (10) 94<br>Swampscott, (4) 21<br>Andover, (6) 38<br>Lawrence, (23) 396<br>Lowell, (51) 97<br>Medford, (13) 77<br>Methuen, (5) 32<br>Waltham, (33) 140<br>Natick, (0) 44<br>Fitchburg, (17) 177<br>Ludlow, (2) 24<br>Northampton, (16) 43<br>Great Barrington, (2) 16 |
| Total cases, | 6,334 | 3,664 | 3,832 | |
| Case rate per 100,000 population, | 161.5 | 93.4 | 99.6 | |
| Scarlet fever: — | | | | Taunton, (3) 9<br>Brockton, (9) 19<br>Hardwick, (0) 9<br>Phillipston, (0) 6<br>Gill, (1) 8<br>Pittsfield, (5) 11<br>Williamstown, (0) 6 |
| Total cases, | 487 | 289 | 412 | |
| Case rate per 100,000 population, | 12.4 | 7.4 | 10.7 | |
| Typhoid fever: — | | | | |
| Total cases, | 69 | 66 | 104 | |
| Case rate per 100,000 population, | 1.8 | 1.7 | 2.7 | |
| Whooping cough: — | | | | Boston, (96) 217<br>Brookline, (2) 57<br>Cambridge, (15) 43<br>Malden, (4) 18<br>Newton, (10) 62<br>Springfield, (11) 34 |
| Total cases, | 1,001 | 829 | 328 | |
| Case rate per 100,000 population, | 25.5 | 21.1 | 8.5 | |
| Tuberculosis, pulmonary: — | | | | |
| Total cases, | 896 | 776 | 736 | |
| Case rate per 100,000 population, | 22.9 | 19.8 | 19.1 | |
| Tuberculosis, other forms: — | | | | |
| Total cases, | 80 | 54 | 65 | |
| Case rate per 100,000 population, | 2.0 | 1.4 | 1.7 | |

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[1] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

# INTERSTATE RECIPROCAL NOTIFICATION IN JUNE, 1918.

| Disease and Locality of Notification. | Health Authority referred to — | Why referred. |
|---|---|---|
| Tuberculosis; Camp Devens, | State Department of Health, Augusta, Me. | Discharged from Camp Devens to home in Auburn, Me. |
| Tuberculosis; Camp Devens, | State Department of Health, Augusta, Me. | Discharged from Camp Devens to home in Waterville, Me. |
| Tuberculosis; Camp Devens, | State Department of Health, Augusta, Me. | Discharged from Camp Devens to home in Lewiston, Me. |
| Tuberculosis; Camp Devens, | State Department of Health, Augusta, Me. | Discharged from Camp Devens to home in Bingham, Me. |
| Tuberculosis; Camp Devens, | State Board of Health, Baltimore, Md. | Discharged from Camp Devens to Baltimore, Md. |
| Tuberculosis; Camp Devens, | State Board of Health, Concord, N. H. | Discharged from Camp Devens to home in Somersworth, N. H. |
| Tuberculosis; Camp Devens, | State Board of Health, Concord, N. H. | Discharged from Camp Devens to home in Manchester, N. H. |
| Tuberculosis; Camp Devens, | State Board of Health, Burlington, Vt. | Discharged from Camp Devens to home in West Savanton, Vt. |

# OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES FOR THE MONTH OF JUNE, 1918.

| Disease. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Aniline, | Mixer, | Chicopee, | M | 32 | W |
| Anthrax, | Teamster, | Winchendon, | M | 50 | W |
| Anthrax, | Errand boy, | Winchendon, | M | 14 | W |
| Anthrax, | Teamster, | Boston, | M | 21 | W |
| Dermatitis, | Dyer, | Methuen, | M | 46 | W |
| Dermatitis, | Wool sorter, | Boston, | M | 50 | – |
| Dermatitis, | Machinist, | Lowell, | M | 47 | W |
| Fumes: — | | | | | |
| Carbon monoxide, | Mechanic, | Lowell, | M | 25 | W |
| Carbon monoxide, | Cider manufacturer, | Lynnfield, | M | 80 | W |
| Sulphur dioxide, | Laborer, | Woburn, | M | 43 | W |
| Lead poisoning, | Illuminator, | Boston, | M | 29 | W |
| Neurosis, | Cigar maker, | Boston, | M | 42 | W |

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, | 3,920,988 | 609 | 2 | 663 | 40 | 36 | 20 | 2070 | 1 | 563 | 242 | 6335 | 100 |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, | 793,471 | 98 | – | 237 | 16 | 8 | 7 | 185 | – | 64 | 66 | 1404 | 20 |
| 4 | Cities, 150,000–200,000. | | | | | | | | | | | | | |
| 5 | Worcester, | 173,419 | 5 | – | 15 | 2 | 3 | 2 | 45 | – | 43 | 19 | 44 | – |
| 6 | Cities, 100,000–150,000. | *578,593* | *131* | – | *91* | *6* | *8* | *2* | *115* | – | *76* | *32* | *753* | *10* |
| 7 | Fall River, | 128,317 | 18 | – | 14 | 3 | 3 | – | 19 | – | 12 | 3 | 24 | – |
| 8 | New Bedford, | 117,855 | 13 | – | 9 | – | 1 | 1 | 1 | – | 9 | 3 | 27 | 2 |
| 9 | Springfield, | 111,983 | 46 | – | 15 | 2 | – | – | 32 | – | 33 | 8 | 212 | 1 |
| 10 | Cambridge, | 111,379 | 48 | – | 46 | – | 2 | 1 | 47 | – | 21 | 10 | 385 | 6 |
| 11 | Lowell, | 109,059 | 6 | – | 7 | 1 | 2 | – | 16 | – | 1 | 8 | 105 | 1 |
| 12 | Cities, 50,000–100,000. | *569,719* | *58* | *1* | *98* | *8* | *2* | *3* | *413* | *1* | *96* | *32* | *1422* | *32* |
| 13 | Lynn, | 99,952 | 1 | – | 13 | – | 1 | 1 | 159 | 1 | 17 | 7 | 76 | 1 |
| 14 | Lawrence, | 93,062 | 5 | – | 10 | 3 | – | 2 | 3 | – | 8 | 8 | 682 | 28 |
| 15 | Somerville, | 93,026 | 2 | – | 21 | 2 | 1 | – | 37 | – | 17 | 3 | 182 | 1 |
| 16 | Brockton, | 65,746 | 4 | – | 3 | – | – | – | 162 | – | 4 | 3 | 32 | – |
| 17 | Holyoke, | 62,796 | 14 | 1 | 5 | – | – | – | – | – | 8 | 3 | 11 | – |
| 18 | Haverhill, | 52,873 | 15 | – | 15 | – | – | – | 34 | – | 15 | 4 | 86 | 2 |
| 19 | Malden, | 51,798 | 2 | – | 19 | 3 | – | – | 12 | – | 12 | 3 | 277 | – |
| 20 | Chelsea, | 50,468 | 15 | – | 12 | – | – | – | 6 | – | 15 | 1 | 76 | – |
| 21 | Cities and Towns, 25,000–50,000. | *487,764* | *148* | – | *73* | *4* | *6* | *2* | *364* | – | *48* | *26* | *900* | *7* |
| 22 | Quincy, | 45,827 | 30 | – | 8 | 1 | 1 | – | 52 | – | 7 | 4 | 114 | 2 |
| 23 | Newton, | 45,234 | 54 | – | 16 | 1 | 1 | – | 58 | – | 6 | 3 | 45 | – |
| 24 | Pittsfield, | 44,410 | 1 | – | 2 | – | 1 | 1 | 8 | – | 12 | 5 | 15 | – |
| 25 | Salem, | 41,082 | 2 | – | 4 | – | – | – | 1 | – | 4 | 2 | 204 | 1 |
| 26 | Fitchburg, | 40,830 | 3 | – | 3 | – | 1 | – | 37 | – | 4 | 1 | 48 | 2 |
| 27 | Everett, | 40,435 | 4 | – | 13 | – | – | – | 4 | – | 4 | 1 | 31 | – |
| 28 | Taunton, | 37,381 | – | – | 3 | – | 1 | 1 | 1 | – | – | 4 | 10 | – |
| 29 | Brookline, | 37,147 | 31 | – | 2 | – | – | – | 70 | – | 1 | 1 | 94 | – |
| 30 | Medford, | 35,230 | 11 | – | 3 | – | – | – | 26 | – | 1 | 1 | 60 | – |
| 31 | Chicopee, | 33,177 | 2 | – | 4 | 2 | – | – | – | – | 1 | – | 20 | – |
| 32 | Waltham, | 31,643 | 10 | – | 2 | – | – | – | 95 | – | 2 | 3 | 239 | 1 |
| 33 | Revere, | 29,643 | – | – | 13 | – | 1 | – | – | – | 1 | 1 | – | 1 |
| 34 | Beverly, | 25,725 | – | – | – | – | – | – | 12 | – | 5 | – | 20 | – |
| 35 | Cities and Towns, 10,000–25,000. | *575,996* | *70* | – | *61* | *2* | *4* | *2* | *424* | – | *72* | *26* | *615* | *16* |
| 36 | Gloucester, | 24,529 | 1 | – | – | – | – | – | 3 | – | 3 | 1 | 1 | – |
| 37 | Northampton, | 23,081 | 2 | – | – | – | – | – | 21 | – | 1 | 1 | 26 | – |
| 38 | North Adams, | 22,045 | 10 | – | 5 | 2 | – | – | 1 | – | 4 | – | 1 | – |
| 39 | Peabody, | 20,489 | 1 | – | 2 | – | – | – | 2 | – | 1 | – | 38 | – |
| 40 | Attleboro, | 19,933 | 1 | – | – | – | – | – | 3 | – | 6 | – | 9 | – |
| 41 | Westfield, | 19,929 | 10 | – | 3 | – | – | – | 36 | – | 9 | 5 | 3 | – |
| 42 | Watertown, | 18,851 | – | – | 2 | – | 1 | – | 3 | – | 1 | 1 | 11 | – |
| 43 | Framingham, | 17,728 | 3 | – | – | – | – | – | 38 | – | 2 | – | 6 | – |
| 44 | Leominster, | 17,688 | 2 | – | 1 | – | – | – | 12 | – | 5 | 3 | 2 | – |
| 45 | Melrose, | 17,627 | – | – | 2 | – | – | – | 12 | – | 8 | – | 1 | – |
| 46 | Gardner, | 17,451 | – | – | 11 | – | – | – | 44 | – | – | 1 | 6 | – |
| 47 | Arlington, | 17,264 | 1 | – | 2 | – | – | – | 12 | – | 3 | 2 | 14 | – |
| 48 | Woburn, | 17,116 | – | – | 1 | – | – | – | 4 | – | 1 | – | 35 | 1 |
| 49 | Marlborough, | 15,680 | – | – | – | – | – | – | 22 | – | – | – | 3 | – |
| 50 | Methuen, | 15,649 | 3 | – | – | – | – | – | 6 | – | – | – | 110 | 4 |
| 51 | Newburyport, | 15,542 | 2 | – | 2 | – | 1 | 1 | 12 | – | 4 | 1 | 16 | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary for addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH,[1] MAY, 1918.

| 38A | | 38B | | 75A | | 19C | | 7 | | 28-29 | | 30-35 | | 1 | | 38C | | 37 | | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ophthalmia Neonatorum. | | Suppurative Conjunctivitis. | | Trachoma. | | Mumps. | | Scarlet Fever. | | Tuberculosis, Pulmonary. | | Tuberculosis, Other Forms. | | Typhoid Fever. | | Gonorrhea. | | Syphilis. | | Whooping Cough. | | |
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| 114 | – | 62 | – | 9 | – | 743 | 2 | 487 | 4 | 896 | 423 | 80 | 67 | 69 | 9 | 787 | 1 | 334 | 22 | 1001 | 53 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 37 | – | 14 | – | 5 | – | 50 | – | 118 | 3 | 321 | 112 | 32 | 14 | 12 | 2 | 361 | – | 173 | 4 | 232 | 16 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 6 | – | 3 | – | 1 | – | – | – | 33 | – | 37 | 17 | 3 | 5 | – | – | 56 | – | 26 | 3 | 9 | 2 | 5 |
| *27* | – | *9* | – | *2* | – | *104* | – | *42* | – | *137* | *75* | *16* | *14* | *16* | – | *115* | – | *41* | *1* | *108* | *5* | 6 |
| 6 | – | 1 | – | – | – | 10 | – | 9 | – | 41 | 18 | 4 | 2 | 10 | – | 17 | – | 15 | – | 22 | 2 | 7 |
| 10 | – | 2 | – | – | – | 3 | – | 5 | – | 29 | 20 | 4 | 4 | 2 | – | 30 | – | 6 | 1 | 6 | 1 | 8 |
| 9 | – | 2 | – | – | – | 85 | – | 15 | – | 18 | 5 | 5 | 3 | 3 | – | 31 | – | 7 | – | 31 | – | 9 |
| 1 | – | 2 | – | 1 | – | 6 | – | 7 | – | 24 | 17 | 3 | 1 | 1 | – | 16 | – | 10 | – | 43 | 2 | 10 |
| 1 | – | 2 | – | 1 | – | – | – | 6 | – | 25 | 15 | – | 4 | – | – | 21 | – | 3 | – | 6 | – | 11 |
| *25* | – | *26* | – | – | – | *55* | *1* | *48* | – | *114* | *48* | *11* | *9* | *18* | *3* | *80* | – | *30* | *3* | *134* | *8* | 12 |
| 3 | – | 14 | – | – | – | 10 | – | 2 | – | 15 | 11 | 2 | 2 | 3 | – | 11 | – | 3 | 1 | 20 | 2 | 13 |
| – | – | – | – | – | – | 1 | – | 1 | – | 23 | 10 | 4 | 3 | 1 | 1 | 11 | – | 12 | 1 | 27 | 2 | 14 |
| 5 | – | 2 | – | – | – | 6 | – | 13 | – | 20 | 7 | 1 | 1 | – | 1 | 8 | – | 4 | – | 14 | 1 | 15 |
| 5 | – | 7 | – | – | – | 25 | – | 13 | – | 9 | 4 | 3 | – | 1 | – | 10 | – | 3 | – | 22 | 1 | 16 |
| 1 | – | 1 | – | – | – | 1 | – | 4 | – | 14 | 8 | – | 1 | – | – | 6 | – | – | – | 5 | 1 | 17 |
| 5 | – | 1 | – | – | – | 8 | 1 | 2 | – | 8 | 3 | – | – | 3 | – | 20 | – | 5 | – | 8 | – | 18 |
| 4 | – | – | – | – | – | 1 | – | 3 | – | 8 | 4 | – | 1 | 6 | – | 2 | – | 1 | – | 17 | 1 | 19 |
| 2 | – | 1 | – | – | – | 3 | – | 10 | – | 17 | 1 | 1 | 1 | 4 | 1 | 12 | – | 2 | 1 | 21 | – | 20 |
| *5* | – | *2* | – | – | – | *48* | *1* | *67* | – | *88* | *44* | *8* | *6* | *3* | – | *57* | – | *22* | *3* | *172* | *6* | 21 |
| 3 | – | – | – | – | – | 4 | – | 10 | – | 14 | 4 | 2 | 1 | – | – | 4 | – | – | – | 2 | – | 22 |
| – | – | – | – | – | – | 9 | – | 2 | – | 7 | 1 | – | – | – | – | 1 | – | – | – | 74 | – | 23 |
| 1 | – | 1 | – | – | – | 2 | – | 19 | – | 11 | 4 | 1 | – | – | – | 5 | – | – | – | 2 | – | 24 |
| – | – | 1 | – | – | – | 5 | – | 5 | – | 6 | 3 | – | – | – | – | 13 | – | 3 | – | 1 | – | 25 |
| – | – | – | – | – | – | 2 | 1 | 1 | – | 6 | 5 | – | – | – | – | 11 | – | 2 | – | 7 | 2 | 26 |
| – | – | – | – | – | – | 5 | – | 4 | – | 16 | 4 | 1 | 1 | – | – | 3 | – | – | – | 20 | 1 | 27 |
| – | – | – | – | – | – | 3 | – | 4 | – | 6 | 7 | – | – | 1 | – | 1 | – | 11 | 1 | 14 | 2 | 28 |
| – | – | – | – | – | – | 11 | – | 7 | – | 3 | 1 | 2 | – | 1 | – | 1 | – | – | – | 30 | – | 29 |
| 1 | – | – | – | – | – | – | – | 12 | – | 4 | 4 | – | 2 | – | – | 4 | – | – | – | 6 | – | 30 |
| – | – | – | – | – | – | 5 | – | – | – | 9 | 8 | 1 | 2 | – | – | 2 | – | – | – | 1 | – | 31 |
| – | – | – | – | – | – | 2 | – | – | – | 1 | 1 | 1 | – | – | – | 3 | – | 1 | 1 | 14 | 1 | 32 |
| – | – | – | – | – | – | – | – | 3 | – | 4 | 2 | – | – | 1 | – | 7 | – | 5 | 1 | – | – | 33 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 2 | – | – | – | 1 | – | 34 |
| *10* | – | *3* | – | – | – | *133* | – | *52* | – | *108* | *45* | *4* | *8* | *10* | *3* | *39* | *1* | *9* | *2* | *112* | *9* | 35 |
| – | – | – | – | – | – | – | – | – | – | 2 | 2 | – | – | – | – | 2 | – | 1 | – | – | – | 36 |
| – | – | 1 | – | – | – | 2 | – | 2 | – | 6 | 6 | – | – | – | – | – | – | – | 2 | – | – | 37 |
| 1 | – | 1 | – | – | – | – | – | 2 | – | 7 | 4 | – | – | 3 | 1 | 1 | 1 | – | – | – | – | 38 |
| – | – | 1 | – | – | – | 3 | – | 2 | – | 5 | 1 | – | – | – | – | 2 | – | – | – | – | – | 39 |
| 1 | – | – | – | – | – | – | – | – | – | 2 | 1 | – | – | – | – | – | – | – | – | 2 | – | 40 |
| – | – | – | – | – | – | 16 | – | 2 | – | 3 | 6 | – | – | – | – | – | – | – | – | 2 | – | 41 |
| – | – | – | – | – | – | – | – | 2 | – | 4 | 1 | – | – | 1 | – | 1 | – | – | – | 14 | – | 42 |
| – | – | – | – | – | – | 2 | – | 6 | – | 4 | 2 | – | – | – | – | 1 | – | 1 | – | 3 | – | 43 |
| – | – | – | – | – | – | – | – | – | – | 2 | 1 | – | – | – | – | 3 | – | – | – | 13 | 1 | 44 |
| 1 | – | – | – | – | – | – | – | 1 | – | 4 | 1 | – | – | – | – | 1 | – | – | – | – | – | 45 |
| – | – | – | – | – | – | 2 | – | – | – | 6 | 1 | 1 | – | – | – | 3 | – | – | – | 11 | 3 | 46 |
| – | – | – | – | – | – | 2 | – | – | – | 8 | 1 | – | – | 1 | – | 1 | – | – | – | – | – | 47 |
| – | – | – | – | – | – | – | – | 1 | – | 2 | 1 | – | – | 1 | – | – | – | – | – | 1 | 1 | 48 |
| – | – | – | – | – | – | 1 | – | 2 | – | 4 | 1 | – | 2 | – | 1 | – | – | – | – | – | – | 49 |
| – | – | – | – | – | – | 1 | – | 2 | – | 1 | – | – | – | – | – | – | – | – | – | 15 | – | 50 |
| – | – | – | – | – | – | 49 | – | 2 | – | 2 | – | 1 | 3 | – | – | – | – | 2 | – | 17 | – | 51 |

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of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | CITIES AND TOWNS GROUPED IN ORDER OF POPULATION. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 15,255 | - | - | 3 | - | - | - | - | - | - | 1 | 5 | 1 |
| 53 | Weymouth, | 14,659 | - | - | 1 | - | - | - | - | - | - | 1 | - | 1 |
| 54 | Winthrop, | 14,443 | 14 | - | 5 | - | - | - | 9 | - | 3 | - | 23 | - |
| 55 | Milford, | 14,088 | - | - | - | - | - | - | 3 | - | 1 | 1 | 70 | 2 |
| 56 | Greenfield, | 14,028 | 4 | - | - | - | - | - | 59 | - | 1 | - | 13 | - |
| 57 | Wakefield, | 13,664 | - | - | - | - | - | - | 3 | - | - | 1 | 1 | - |
| 58 | Plymouth, | 13,430 | 1 | - | 4 | - | - | - | - | - | 1 | - | - | - |
| 59 | Adams, | 13,340 | - | - | - | - | - | - | - | - | - | - | 2 | 1 |
| 60 | Clinton, | 13,266 | - | - | - | - | - | - | 12 | - | 8 | 2 | 11 | - |
| 61 | Webster, | 13,242 | - | - | 6 | - | - | - | 6 | - | - | - | 28 | 2 |
| 62 | Norwood, | 12,879 | 2 | - | - | - | - | - | 25 | - | 1 | - | 44 | 1 |
| 63 | West Springfield, | 12,696 | - | - | - | - | 1 | 1 | 1 | - | 2 | - | 10 | - |
| 64 | Danvers, | 12,309 | 1 | - | - | - | - | - | 7 | - | 2 | 3 | 15 | - |
| 65 | Dedham, | 12,172 | 1 | - | 1 | - | - | - | - | - | - | - | 5 | - |
| 66 | Natick, | 11,924 | - | - | 4 | - | - | - | 1 | - | 2 | 1 | 84 | 2 |
| 67 | Saugus, | 11,625 | - | - | 1 | - | - | - | - | - | - | 1 | 1 | - |
| 68 | Easthampton, | 10,692 | - | - | 1 | - | - | - | - | - | - | - | 4 | - |
| 69 | Athol, | 10,582 | 3 | - | - | - | - | - | 6 | - | 1 | - | 3 | - |
| 70 | Bridgewater, | 10,468 | - | - | - | - | - | - | 7 | - | 2 | - | 1 | - |
| 71 | Winchester, | 10,451 | 6 | - | 1 | - | - | - | 38 | - | - | - | 8 | - |
| 72 | Braintree, | 10,162 | 2 | - | 2 | - | 1 | - | 15 | - | - | - | 2 | 1 |
| 73 | Palmer, | 10,019 | - | - | 1 | - | - | - | 1 | - | - | - | 3 | - |
| 74 | TOWNS, 5,000-10,000. | *346,607* | *56* | - | *36* | *1* | *2* | *2* | *321* | - | *43* | *18* | *579* | *3* |
| 75 | TOWNS, 2,500-5,000. | *182,889* | *15* | - | *29* | *1* | *1* | - | *105* | - | *15* | *9* | *268* | *4* |
| 76 | TOWNS UNDER 2,500. | *212,530* | *25* | - | *16* | - | - | - | *97* | - | *15* | *9* | *203* | *2* |
| 77 | STATE INFIRMARY, | | *2* | *1* | *2* | - | - | - | - | - | *2* | - | *62* | *6* |
| 78 | CAMP DEVENS, | | *1* | - | *5* | - | *2* | - | *1* | - | *89* | *5* | *85* | - |

In addition to the above there occurred 6 cases of anterior poliomyelitis, 1 in Barre, 1 in Boston, 1 in dog-bite (requiring antirabic treatment), 3 in Barre and 3 in Boston; 4 cases of malaria, 2 in Lynn and borough; 3 cases of smallpox, 2 in Boston and 1 in Lynn; 3 cases of tetanus, 1 in Lawrence, 1 in Taunton sore throat, 5 cases in Boston, 1 in Cambridge, 1 in Chelsea, 1 in Everett, 1 in Framingham and 1 in Med-

TO THE PUBLIC HEALTH — Concluded.

| 38A Ophthalmia Neonatorum. | | 38B Suppurative Conjunctivitis. | | 75A Trachoma. | | 19C Mumps. | | 7 Scarlet Fever. | | 28-29 Tuberculosis, Pulmonary. | | 30-35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 38C Gonorrhea. | | 37 Syphilis. | | 8 Whooping Cough. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| - | - | - | - | - | - | - | - | - | - | 4 | - | - | - | - | - | 5 | - | 1 | - | - | - | 52 |
| - | - | - | - | - | - | - | - | - | - | - | 2 | - | - | 1 | - | - | - | - | - | - | 1 | 53 |
| 1 | - | - | - | - | - | 2 | - | 12 | - | 2 | - | - | - | - | - | 1 | - | - | - | 2 | - | 54 |
| - | - | - | - | - | - | - | - | 1 | - | 3 | 2 | - | - | - | - | - | - | - | - | 6 | - | 55 |
| - | - | - | - | - | - | 17 | - | - | - | 4 | - | - | - | - | - | 3 | - | 1 | - | 2 | 1 | 56 |
| - | - | - | - | - | - | 1 | - | 1 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 57 |
| 1 | - | - | - | - | - | - | - | 1 | - | 3 | 1 | - | - | 1 | - | 1 | - | - | - | 1 | - | 58 |
| - | - | - | - | - | - | - | - | 1 | - | 1 | 3 | - | - | 1 | 1 | - | - | - | - | - | - | 59 |
| - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 3 | - | 60 |
| 2 | - | - | - | - | - | - | - | - | - | 7 | 1 | - | - | - | - | 1 | - | - | - | - | - | 61 |
| - | - | - | - | - | - | 1 | - | 1 | - | 3 | - | - | - | - | - | 1 | - | - | - | - | - | 62 |
| - | - | - | - | - | - | - | - | 1 | - | 3 | - | - | - | - | - | 1 | - | - | - | - | - | 63 |
| - | - | - | - | - | - | 31 | - | - | - | 2 | 4 | - | - | - | - | 1 | - | 2 | - | - | - | 64 |
| - | - | - | - | - | - | 1 | - | - | - | 2 | 1 | - | - | - | - | 1 | - | - | - | 3 | - | 65 |
| - | - | - | - | - | - | - | - | 3 | - | 2 | 1 | 1 | - | - | - | - | - | - | - | - | - | 66 |
| - | - | - | - | - | - | - | - | 4 | - | 2 | 1 | - | - | 1 | - | - | - | - | - | - | - | 67 |
| - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | 3 | - | - | - | - | - | 68 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 | - | 1 | - | 1 | - | 69 |
| 2 | - | - | - | - | - | - | - | - | - | - | - | - | 2 | - | - | - | - | - | - | 12 | 1 | 70 |
| - | - | - | - | - | - | - | - | - | - | 3 | - | - | - | - | - | 1 | - | - | - | 1 | 1 | 71 |
| - | - | - | - | - | - | - | - | 2 | - | 2 | - | 1 | 1 | - | - | 2 | - | - | - | 3 | - | 72 |
| 1 | - | - | - | - | - | 1 | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | - | 73 |
| *3* | - | *5* | - | *1* | - | *53* | - | *58* | - | *45* | *23* | *4* | *6* | *4* | *1* | *23* | - | *9* | *1* | *174* | *5* | 74 |
| - | - | - | - | - | - | *24* | - | *16* | - | *13* | *12* | *1* | *3* | *3* | - | *6* | - | *3* | *3* | *10* | *1* | 75 |
| *1* | - | - | - | - | - | *39* | - | *44* | *1* | *20* | *25* | - | *2* | *3* | - | *42* | - | *18* | - | *58* | *1* | 76 |
| - | - | - | - | - | - | - | - | - | - | *13* | *21* | *1* | - | - | - | *8* | - | *3* | *2* | - | - | 77 |
| - | - | - | - | - | - | *237* | - | *9* | - | - | *1* | - | - | - | - | - | - | - | - | - | - | 78 |

Cambridge, 2 in Framingham, and 1 in Revere, with 2 deaths, 1 in Lowell and 1 in Revere; 6 cases of
2 in Boston; 3 cases of pellagra, 1 in Boston, 1 in Chelsea and 1 in Foxborough, with 1 death in Fox-
and 1 in Springfield, with 1 death in Taunton; 1 case of typhus fever in Chelsea; and 10 cases of septic
ford, with 1 death in Boston.

# LABORATORY AIDS FOR DIAGNOSIS AND TREATMENT OF COMMUNICABLE DISEASES.

The State Department of Health maintains, as a part of its regular work, bacteriological and biological laboratories to aid in the control and prevention of communicable diseases. The facilities of these laboratories and certain supplies furnished by them are available to physicians for the free use of residents of the Commonwealth. Upon requisition these supplies are sent to local boards of health, from whom physicians may obtain them as required.

The following supplies are available: —

Diphtheria antitoxin, 4 sizes: 1,000, 3,000, 6,000 and 12,000 units.
Antityphoid vaccine (3 ampoules in each set).
Triple vaccine, to secure immunity against typhoid, paratyphoid A and paratyphoid B.
Smallpox vaccine.
Antimeningitis serum.
Antirabic treatment (secured by special arrangement in each case through District Health Officers).
Outfits for diphtheria cultures.
Outfits for Widal tests (typhoid fever).
Outfits for culture tests (typhoid fever).
Schick tests for determining diphtheria immunity, and toxin-antitoxin mixture for producing active immunization against diphtheria (both of these products on application to State District Health Officers).
Outfits for prevention of ophthalmia (silver nitrate in wax ampoules).
Outfits for sputum.

The following examinations are made for diagnosis at the laboratories, the specimens being sent to the laboratories by the physicians in attendance: —

At Bacteriological Laboratory, Room 527, State House: —

Culture test for typhoid, blood (of value only in first five days).
Widal test for typhoid, blood (rarely positive before fifth day).
Culture test for typhoid, stools, urine (probable carrier cases chiefly).
Sputum for tubercle bacilli (consumption).
Pus smears for gonococci.
Blood smears for malaria.
Throat and nose cultures for diphtheria.

At Wassermann Laboratory, Harvard Medical School, Longwood Avenue, Boston, Wassermann test for syphilis: —

Specimens are received in Wassermann Laboratory when submitted by direction of the District Health Officers or local boards of health. Samples of blood are taken at the laboratory on Tuesdays and Thursdays from 3 to 5 P.M. There is no charge for this class of work.

In addition to the above work examinations are made for rabies, glanders and anthrax for the Department of Animal Industry. Specimens to receive attention must be submitted through direction of the Department of Animal Industry.

Aside from the above facilities having to do with communicable diseases, examinations of pathological tissues for diagnosis of cancer, etc., will be made at the Laboratory of the Harvard Cancer Commission, Harvard Medical School, Longwood Avenue, Boston.

(Containers and instructions for submitting specimens may be obtained from the District Health Officers or directly from the Department at the State House.)

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner of Health, EUGENE R. KELLEY, M.D.

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| The Connecticut Valley District, | GEORGE T. O'DONNELL, M.D., Springfield. |
| The Berkshire District, | HOWARD A. STREETER, M.D., Pittsfield. |

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[1] Leave of absence, military service.

# THE COMMONHEALTH

Vol. 5, No. 8 August, 1918

## MONTHLY BULLETIN

MASSACHUSETTS
STATE DEPARTMENT OF HEALTH

EUGENE R. KELLEY, M.D., Commissioner

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# FOOD FOR THE CHILD.

By Alzira Wentworth Sandwall, S.B., Health Instructor on Foods, Massachusetts State Department of Health.

THE nutrition of the child is of the utmost importance. The physical welfare of future nations is dependent upon the health of the children of this generation. The health of the child is, without question, dependent upon proper food.

In order that the child may develop normally and be physically strong he must have right nourishment from the beginning. This means that the expectant mother must have food sufficient in character and amount to meet her own needs and those of the coming child. If she does not, either she or the child, or both, will suffer. The best diet for the expectant mother is a mixed one, simple in character and including daily milk, eggs, cereals, bread and butter, fruits and vegetables, with meat not more than once a day. Overeating, indulgence in highly seasoned food, rich desserts, pastries and alcoholic drinks should be avoided. Water should be taken freely. Milk, fruits and vegetables are especially necessary for their mineral content, and for the indispensable growth-promoting substances which they contain. The germ of the first teeth is formed before the child is born, and if the diet of the mother contains insufficient mineral the first teeth may be deprived of the food needed for their proper development.

After birth, breast milk, the natural food for the baby, is the safest and best food. The nursing mother must be careful of her own diet. It should be generous, nourishing and uniform in character, with plenty of fluid. Rich, highly seasoned foods, and those difficult to digest, should be avoided. In addition to the three regular meals it is advisable to take milk, cocoa, malted milk or gruel at bedtime and between meals. If her milk does not agree with the infant the mother should consult a physician. Since the mental condition often has a marked effect on the milk secretion she should be protected as far as possible from worry, anxiety, undue excitement and fatigue.

If for any good reason the mother cannot nurse her child, cow's milk, properly modified, is the best substitute. While the ingredients in cow's milk and mother's milk are practically the same they are present in different proportions. Cow's milk contains more protein and mineral than mother's milk and less sugar. Modifying cow's milk simply means changing the proportions so that it is easier for the child to digest. It can never take the place of mother's milk, however, for both the protein and fat in cow's milk are more difficult for the infant to digest than those in mother's milk.

During the first six months milk will generally be sufficient to meet the needs of the infant. It contains all the elements necessary for his growth, and is the food best adapted to his delicate digestion. Milk, however, is deficient in iron. Nature has protected the infant against this by equipping him with a supply adequate for six or eight months. At this time it is wise to add to the diet strained fruit juices from ripe, sound fruit, such as oranges. They not only contain iron, but help to keep the bowels regular. The juices should be given midway between the regular feedings, beginning with one tablespoon once a day, and gradually increasing the amount to two tablespoons twice daily. Sometimes a child who objects to fruit juice served from a spoon or cup will take it willingly from a bottle.

At the beginning of the ninth or tenth month still further additions may be made to the diet in the form of egg yolk lightly cooked. If the teeth are beginning to come a piece of dry bread or cracker may be given. The egg yolk is valuable both for the iron it contains and for its easily digested fat.

By the end of the twelfth month the baby will probably be able to take plain cow's milk. A quart a day should form the basis of his diet, and this amount should be continued throughout the period of active growth. It is indispensable in the diet of the child during the ages of two and three because it is the best food for the second teeth which are forming during this period.

As much care is required in feeding during the second year as during the first. Much of the illness and many of the deaths in childhood are due to improper feeding at this time. Milk should still form the basis diet. The fruit juices and egg yolk should be continued, and the whole egg may be gradually added and should be very lightly cooked. The white should never be served hard cooked to young children. Stale bread, cereals thoroughly cooked and served in gruel form, and thoroughly and finely mashed vegetables may also be added during the second year.

All changes and additions to the diet of the child should be made gradually, and the effect on the child carefully noted. The digestive tract is very delicate, and should not be overtaxed but allowed to develop naturally. At this age five meals a day, at about four-hour intervals, are generally necessary, and may be divided as follows: —

First meal, 7 A.M., 1 cup warm milk.

Second meal, 8.30 A.M., 1 to 2 tablespoonfuls fruit juice.

Third meal, 10.30 A.M., 1 cup milk and barley gruel; 2 slices dry bread.

Fourth meal, 2 P.M., 1 cup milk; yolk egg lightly boiled; 1 or 2 slices dry bread; 1 to 2 tablespoonfuls mashed spinach.

Fifth meal, 5.30 P.M., 1 cup strained cereal with milk; 1 or 2 slices dry bread.

By the beginning of the third year the following foods will have been introduced into the diet of the child: milk, eggs, fruits, vegetables, cereals and dry breads. Milk should, of course, continue as the chief food; the other foods may be increased in quantity, and the mode of serving may be more varied. The cereals may be given unstrained; fruit pulp and baked fruit without skin, such as baked apples and bananas, may take the place of fruit juices. Simple desserts may be served, such as custards, natural brown rice, cereal, bread, tapioca, and cornstarch puddings, or junket. The child who has not been taught to relish plain milk can have it in cocoa, soups, sauces for vegetables, cream toast, puddings and bread puddings, and other simple desserts. Four meals a day will generally be sufficient, and may be divided as follows: —

First meal, 7 A.M., orange juice or prune pulp; well-cooked cereal with milk; 1 cup milk to drink; 2 slices dry bread.

Second meal, 10.30 A.M., 1 cup milk with slice of dry bread or cracker.

Third meal, 2 P.M., green pea soup; soft-cooked egg with dry bread and butter; baked potato; junket.

Fourth meal, 5.30 P.M., bread, rice, a cereal with milk; baked apple.

In his early years the child grows very rapidly. Food which promotes this growth, — namely, the proteins, minerals and the dietary essentials, sometimes called vitamines, must be supplied. And, since he is very active, enough food to take care of this great expenditure of energy must also be provided in form of carbohydrate and fat.

The best protein foods for the child are milk and eggs, the protein in milk being three times as valuable as that found in any other food. Milk should be given daily. But since the child is likely to tire of a daily diet of eggs, delicate fish, broiled or boiled, scraped raw beef or mutton, rare roast beef or mutton pounded to a pulp, or the lean white meat of chicken, minced to a pulp, may be given once or twice a week. Smoked or highly seasoned meats or fish, meats such as ham, sausage, pork in all forms, goose, game, kidneys and liver have no place in the dietary of a young child.

Minerals and the unknown dietary substances so absolutely necessary to normal growth will be supplied if milk, fruits and green vegetables are represented daily in the diet.

Butter, cream and bacon are all easily digested, and are the best fats for children. A teaspoonful of butter may be given daily to the child of two, and the amount gradually increased to 6 teaspoonfuls for the child of five or six. Bacon should always be cooked until it is crisp, but not burned, and should not be given before the age of five or six. Foods fried in fat or rich pastries and the like should not be permitted.

Baked potato, unpolished rice, tapioca and cornstarch puddings, dry or stale bread and cereals, with the careful use of simple sweets, are the best sources of carbohydrates.

Care should always be taken to thoroughly cook all starchy food. Bread should always be dry or stale for two reasons, — the teeth need exercise if they are to develop normally, and as most of the foods of childhood are soft, the dry bread or cracker affords one of the best means of giving the teeth their necessary exercise; the digestion of starch starts in the mouth, and if soft breads are allowed they are not likely to be masticated long enough to insure their complete digestion.

Sweets for children should always be simple in character and should be served at the end of a meal. The pernicious habit of nibbling candy and sweets between meals should never be permitted. Highly sweetened foods will often cause a dislike for the natural sweetness of milk, and if allowed between meals or at the beginning of a meal are apt to so dull the appetite that enough of the necessary food will not be eaten.

It goes without saying that coffee, tea and alcoholic drinks are not for children. They have no food value and act only as a stimulant and filler. Milk and plain cocoa are the best drinks for children.

The child needs right food in sufficient amounts, properly cooked, but this is not enough. The cultivation of a judicious appetite and the formation of good food habits are a legitimate part of the training of every child. Such training should be started in infancy when regular hours for nursing should be established and rigidly followed. After the child is weaned his meals should be served with the same regularity, and an older person should always be present to see that they are eaten properly and thoroughly masticated. Good table manners and proper eating habits are indispensable, and should be taught from the first year. The little hands find it difficult to manage the knife and fork, but it is as easy to learn the right way as the wrong, and a wrong habit is difficult to break. It is easier for a child to learn to chew noiselessly with his mouth closed than to suffer embarrassment later in life, and so on throughout the whole list of table manners. It is the child's right to receive proper instruction in these essentials.

The cultivation of a judicious appetite is without question the result of wise training in childhood. The child should be taught that certain foods are not children's foods, and adults should realize that they are doing the child an injustice when they give him such food. It is a great mistake to allow children to acquire foolish distastes for simple foods. Such distastes are often the result of imitation (if father dislikes eggs little John will speedily feel the same way about them), or caused by derogatory remarks about food, or may be due to allowing the child to have his own way about food as soon as he is able to eat at the table with his elders. The parent who brags that his two-year-old child can eat anything on the table is proclaiming his own ignorance and his injustice to his child. It is the child's right to have foods suited to his needs and age, and it is the mother's duty to know what those foods are and to see that the child receives them. Children can be taught self-control with regard to food, and need very careful direction along this line, for the health of the adult is greatly dependent upon proper nutrition in childhood. Parents are directly responsible for the eating habits of their children, and should not be found wanting in this direction.

Food well cooked and attractively served has much to do with influencing the diet, and great care should be taken to prepare it in a neat and orderly manner. This is especially necessary for a nervous or delicate child. Care should also be exercised to avoid a monotonous diet, and it should not be forgotten that the digestive system is very sympathetic, and a child forced to eat against his will, or allowed to eat when tired, unhappy or greatly excited, will not be able to properly digest his food. Contentment and good cheer should always prevail at the table.

## BARNSTABLE COUNTY SURVEY.

By Bernice W. Billings, Chief, Subdivision, Tuberculosis, State Department of Health.

In April, 1918, a tuberculosis survey of Barnstable County was made by the subdivision of tuberculosis of the Division of Communicable Diseases of the State Department of Health.

The purpose of this survey was to discover the number of patients who were qualified for treatment in the county hospital, and also to determine the number of tuberculous patients who were living in the county.

Barnstable County has an area of 444 square miles, and is made up of 15 towns. The total population is 29,396, and the foreign population is mostly Portuguese.

The chief industries are farming, fishing, boat building, canning, car manufacturing, cooperage, wire-work, awnings, glass-cutting, paper goods and stencils.

The sources of information were as follows: records from the State Department of Health; local board of health; State sanatoria; local hospitals; exemption board; local physicians; public health nurses; and private individuals.

A card catalogue was made of all cases of tuberculosis in the county, and included the period from January, 1908, to April, 1918.

Board of health agents, physicians and public health nurses were interviewed in their respective towns, previous to a house to house canvass when patients or their families were visited.

The result of this work is shown by the following figures: —

| | | |
|---|---|---|
| Total number persons considered, | | 446 |
| Living cases, | 126 | |
| Deaths, | 320 | |

*Cases.*

| | | |
|---|---|---|
| Total number of tuberculous patients now living in Barnstable County, | 57 | |
| Total number of tuberculous patients who left county, | 21 | |
| Total number of tuberculous patients with unknown address, | 14 | |
| Total number of cases for which diagnosis was revoked, | 3 | |
| Total number of cases suspicious, | 31 | |
| Total, | | 126 |
| Total number of qualified cases for county hospital, | | 27 |

| | | |
|---|---|---|
| Total number of tuberculous patients now living in Barnstable County, | | 57 |
| Reported cases, | 40 | |
| Cases for which no official report was received, | 17 | |
| Diagnoses: — | | |
| Pulmonary, | 49 | |
| Bone, | 5 | |
| Adenitis, | 3 | |
| Total number of patients in sanatoria, | 4 | |
| Total number of patients in hospitals, | 4 | |
| Total number of patients left State temporarily, | 1 | 9 |
| Total number of cases residing at home, | | 48 |
| Total number of cases under medical supervision, | 27 | |
| Total number of cases under no medical supervision, | 21 | |

*Deaths.*

| | | |
|---|---|---|
| Total number of deaths from tuberculosis in Barnstable County, | | 320 |
| 1908 to 1914, | 228 | |
| 1915 to 1918, | 92 | |
| Total number of deaths officially reported as tuberculosis, | 107 | |
| Total number of deaths for which no official report of tuberculosis was received, | 213 | |

The following facts were brought out by this survey: —

(*a*) That of the 43 patients officially reported with tuberculosis, 13 patients were cases qualified for the county hospital.

(*b*) That 17 patients diagnosed as tuberculous had never been officially reported to the State Department of Health, and 7 of these were unknown to the Department previous to the time of the survey. Nine of these 17 patients were considered qualified cases for the county hospital.

(*c*) That of the 31 persons classified as suspicious, 12 were referred by the exemption board; 17 by private physicians; and 2 from other sources. Also that of the 28 persons remaining as suspicious after examination of 3 who were confirmed as non-tuberculous, 21 were under medical supervision, but as clinical symptoms were not confirmed by positive laboratory findings they were not reported as tuberculous; and that of these 28 patients 5 were considered candidates for the county hospital.

(*d*) That of the 15 men exempted from the draft because of tuberculosis or as suspicious cases of tuberculosis the diagnosis as obtained was as follows: —

| | |
|---|---|
| Tuberculous, | 3 |
| Suspicious, | 6 |
| Non-tuberculous, | 3 |
| Not examined, | 3 |

Of the 12 patients classified as positive, suspicious and not examined, 6 were under medical supervision and 9 were found to be working.

In one of these towns there have been no cases of tuberculosis reported to the local board of health for the past ten months, and during this time two patients have died of tuberculosis who were not reported and who did not visit a physician until shortly before death. In this section of the county the townspeople are said to be so fearful of being told they have tuberculosis that they refuse to go to a physician until nearing the end.

There was also found to be one board of health which refuses to accept a diagnosis from a physician unless it is accompanied by a record of a positive sputum. Due to this ruling the local physicians are not reporting cases on a clinical diagnosis alone.

### Summary.

A brief summary of this survey brings out the following facts: —

There are 57 tuberculous patients in Barnstable County, 17 of whom were never officially reported to the State Department of Health; 7 of these patients were unknown to the State Department of Health previous to the survey. There were 28 cases classified as suspicious at the close of the survey.

Of the total number of tuberculous and suspicious cases 27 were considered as qualified for treatment in the county hospital.

During the past three years there have been 92 deaths from tuberculosis, and it is believed that at the present time there are many tuberculous patients in this county who have not been discovered.

We would urge that more of these towns employ public health nurses who would do home and school nursing. It would seem advisable for the smaller towns to combine and have one nurse for from two to three towns, providing she is supplied with a means of conveyance. These nurses would be invaluable in general educational work, and would assist in locating the undiscovered cases of tuberculosis.

We would also suggest that a tuberculosis clinic be opened in Provincetown where needy patients could be examined free of charge.

## TYPHOID CARRIERS.

By Bernard W. Carey, M.D., Epidemiologist, Massachusetts State Department of Health.

EPIDEMIOLOGICAL investigation of typhoid has to-day become in a large measure a search for the carrier of the disease and for the source of infection in polluted water supplies, contaminated food or contact infection. The reason for this additional investigation is that while vast improvement has been made in our sewerage systems; in guarding, storing and filtering our water supply; in the inspection of our food and the hospitalization of the acutely ill, together with a more complete understanding of personal prophylaxis for those exposed, the disease is still with us.

A lamentable fact is presented to us in our investigations, and because of the frequency of its presentation deserves some comment.

Daily we find not a small proportion of people harking back to the olden days of miasmism, willing to charge their infection to all sources save that to which it is truly accountable.

Before the true etiological factor of communicable disease was established there were perhaps good reasons for the deductions made as to their causation. Typhoid fever as seen by the medical profession of the earlier times was always associated with insanitary conditions. It was noted that dirt, flies and improper hygiene of the home were constantly present, and while the knowledge of immunity or personal resistance and of the exact causative agent was absent or very limited, by directing efforts to rectify these conditions wonderfully good results were achieved, save in the face of a marked epidemic.

To-day, however, while we have in the main the same conditions as formerly existed, we also have the true cause of typhoid in the bacillus of Eberth, and likewise we now possess the knowledge of the distribution of typhoid by urine or feces from the infected person, whether or not he is openly sick with the disease.

No longer is it possible to charge the infection to a "smelly garbage pail," a "damp cellar" or that "foul vapor arising from neighboring marsh or swamp at nightfall."

As history repeats itself, so does epidemiological investigation repeatedly show outbreak after outbreak due to a milk infection, giving the following history: "John Doe, age 54, history of typhoid from one to thirty years ago, never been ill since; a few days ago, however, he had a slight diarrhœa due to eating fruit. His regular employment is that of teamster, and he does no milking, but because his wife was ill he did help ten days ago to bottle the milk." We examine his blood, find a positive Widal and then examine his stool, which proves to be positive, establishing the fact that he is a healthy carrier, and also proving that he is the probable source of the outbreak which is occurring on this particular milk route.

We now know how to check such an outbreak, for all that is necessary is to prevent this infected individual coming in contact with milk, and the proper isolation and prophylaxis of patients and their households.

Our chief hope of reducing typhoid as it occurs both sporadically and epidemically in our community must lie in the discovery of carriers of the disease. Listing their names and addresses, using a follow-up system whereby these people will be visited, instructed and encouraged to keep up their personal prophylactic cleanliness, and seeing to it that they do not enter food-handling occupations, offers a valuable procedure for the prevention of new infections.

The procedure of detecting and supervising healthy carriers is one that has as its first requisite a desire to practice preventive medicine in its fullest sense. This means that the amount of endeavor expended must be sufficient to carry out our knowledge of typhoid prevention to its minutest detail. It is of no avail merely to make an investigation, taking as true the statements of the suspected individuals that they have never had typhoid until they have been proven innocent of infection by a Widal. We must consider all suspected persons guilty until proven otherwise by negative examinations, and in the event of obtaining a positive or even an atypical reaction we should proceed to examine the stools and urine of all those giving such reactions.

The number of carriers remaining after the acute illness has been variously stated, some writers giving 2 per cent. and others as high as 5 per cent. It would seem, perhaps, that the percentage of carriers in Massachusetts, while only estimated, is well within the range as given, for it seems fair to assume that if chronic healthy carriers existed in a larger proportion, the sporadic and epidemic incidence would be greater than it is at the present time.

To call attention to the importance of the healthy carrier, let me quote from the records of the Massachusetts State Department of Health a few cases where the carrier was found to give a positive reaction both for blood and feces, and the number of cases directly traceable to him.

*1. Mr. A. Occupation, Milk Handler.*

Widal+, Sept. 30, 1915.
Widal—, Sept. 30, 1916.
Feces+, Sept. 20, 1915.
Feces+, Sept. 24, 1915.
Feces+, Sept. 25, 1915.
Feces+, Dec. 29, 1915.
Feces+, Feb. 20, 1916.

| Date. | Cases responsible for. | Agency. |
|---|---|---|
| 1915,<br>1916,<br>1917, | 10 | Milk. |

### *2. Mr. B. Occupation, Market Gardener.*

Widal+, 1912.
Widal+, July 29, 1916.
Widal+, Aug. 10, 1916.
Feces—, 1912.
Feces—, Aug. 14, 1916.
Feces+, Sept. 5, 1916.
Feces—, 1917.

| Date. | Cases responsible for. | Agency. |
|---|---|---|
| 1899, | 1 | Milk and food. |
| 1911, | 1 | Milk. |
| 1912, | 1 | Milk and contact. |
| 1915, | 1 | Milk. |
| 1916, | 1 | Milk and contact. |

NOTE. — Patient never had typhoid fever, but did have grippe in 1896.

### *3. Miss C, in Institution. Occupation, Food Handler.*

Widal, not done.
Feces+, June 8, 1915.

| Date. | Cases responsible for. | Agency. | Place. |
|---|---|---|---|
| 1915, | 22 | Food | Hospital |

### *4. Mr. D. Occupation, Milker (Occasional).*

Widal+, Feb. 14, 1918.
Feces+, Feb. 16, 1918.

| Date. | Cases responsible for. | Agency. |
|---|---|---|
| 1911, | 10 | Milk. |
| 1914, | 2 | |
| 1915, | 1 | |
| 1918, | 2 | |

NOTE. — This man did not milk regularly, but when he did so outbreaks followed.

This list is representative of many such histories, and proves that a valuable means of prevention is available if proper supervision is exercised.

As the essential activity of a board of health is to prevent infection from all sources, when the source becomes as apparent as it is in these cases it surely is its duty to control it by all available means.

We frequently see considerable amounts of money appropriated for the eradication of nuisances, such as drainage of malarial swamps and marshes, collection of garbage and such activities, each, to be sure, possessing distinct values; but when money is asked for the establishment of laboratories essential to the proper and scientific practice of preventive medicine we are often told that there are no available funds. This is not a valid reason, however, for the non-employment of the valuable agencies at our command, for the State Department of Health places at the disposal of the citizens of Massachusetts not only the specialized knowledge of the District Health Officers for handling such situations, but also laboratory facilities for the examination of specimens of blood, urine and feces.

For the larger cities and towns possessing district nurses, social workers connected with hospital or clinic, or board of health nurses it is practicable and feasible that a follow-up system be established whereby the discharged typhoid patient will be visited at fixed periods following his discharge from hospital or home as cured. We would suggest a visitation six weeks after the patient is discharged as well, and again six months later, collecting stools and urine for examination and advising as to personal prophylaxis, being particularly exacting when the disease has occurred on the premises of a food handler or producer.

If this procedure be carried out with careful recording of visitations the local health department will have on record the actual sources of infection in their community, and will be able if an outbreak should occur to trace and eliminate the known carriers as possible sources of infection.

# A WEEK'S VENEREAL DISEASE CAMPAIGN IN THE BERKSHIRE DISTRICT.

By Howard A. Streeter, M.D., State District Health Officer, State Department of Health.

As a part of the venereal disease program of the State Department of Health the film "Fit to Fight" was shown in the Berkshire District early in August, in the moving-picture theatres of Pittsfield, Lee, Stockbridge, Great Barrington, Housatonic, Adams and North Adams.

In North Adams the theatre was filled to capacity, and the standing room was taxed, while in Adams many were turned away for want of room.

In Lee and Great Barrington arrangements were made with the assistance of the public safety committee. Arrangements for Sunday evening, August 4, and the following Tuesday afternoon, were made with the officials of a large industrial corporation in Pittsfield. In other communities the local boards of health assisted.

In every instance the proprietors of moving-picture houses donated the use of the theatre, asking in return only the expense of lighting and the fee of the operator. To these men is due a big vote of thanks. This meager statement can convey, only in a limited sense, to one not fully conversant with the facts, the whole-hearted and unselfish interest displayed by the proprietors of the theatres.

In Pittsfield three performances were held on Sunday afternoon and evening, August 4, and one on Wednesday following, at the local theatre. The Sunday afternoon performance was given to the general public.

The evening showing was arranged with the officials of a large electric plant for their employees, and so great was the interest that an extra showing was necessary to accommodate those seeking admission. The band gave a half-hour concert in the theatre before each performance and a short concert in the street between performances. The company assumed all financial obligations for these shows.

Professional and business men were specially invited to the Wednesday morning exhibition. Let it not be supposed that admission was refused any one; all comers were admitted.

Tuesday afternoon, August 6, a special showing was given in the lecture hall of the company mentioned above for the benefit of the general superintendents and division heads of the local organization.

This performance gave ample opportunity for the asking and answering of questions relating not only to the effect of venereal diseases on the individual, but also to the effect they might have on the efficiency of the infected employee.

On August 8, at a meeting of the executives of the company, the question was discussed, and the action taken is best explained in the accompanying letter.

In Lee the moving-picture house is in the Town Hall, and the performance took place immediately after the adjournment of a special town meeting.

In Stockbridge, likewise, the meeting place was the Town Hall, and while the attendance was not as large as in other towns, the lack in numbers was compensated in a large measure by the enthusiasm manifested.

In Great Barrington one company closed its plant at 4 o'clock to allow its male employees to attend. The audience was representative, including business and professional men and those engaged in varied occupations.

In Housatonic there were less than a score of seats vacant at the hour of opening, and none were vacated until the very close of the film. Housatonic's moving-picture booth is in the village hall.

In North Adams the mill officials allowed their male employees, who expressed such desire, to attend the showing of the film, and no deduction was made from their time. This showing was in the local theatre, and the "standing room only" sign was early displayed.

It was arranged to show the film at the Town Hall in Adams, and in less than five minutes after the appointed hour the hall was filled to the doors.

Before each performance Maj. Alec N. Thomson explained to the audience the program inaugurated by the Federal government and the several States for the eradication of venereal diseases.

The lecture and film appeared to affect each audience in a similar manner, applause and laughter bursting forth at a lively or comical action, to be followed by deep silence when the deeper emotions were touched. In each instance these emotions were manifested at a similar point in the drama. In only one instance was any levity noticed, and this seemed to be more the bravado of a few "fresh" youths than any lack of appreciation of the story. This levity entirely vanished before the close of the fourth reel.

Following are a few comments heard at the performances, over the telephone, or in private conversation: "The best film I ever saw." "Gee, that gave some fellow a jolt in the eye." "Never knew before the difference between gonorrhea and syphilis." "Never knew venereal diseases were so destructive." "Show it to women, it will do them good." "I have learned something." "The film should be shown often." "That is the saddest picture I ever saw," the latter referring to the blind babies and blind children. Not one unfavorable word or comment was heard; all appeared to be deeply affected, and in a few instances the affectation was visibly manifested.

The newspapers reported the showings, printed the material supplied by the Massachusetts Health Committee and made editorial comment. These articles were printed without reservation, and dealt openly with the subject.

The film was well advertised beforehand. Display cards furnished by the Massachusetts Health Committee were posted in towns and cities where performances were given; theatre managers advertised the film on their screens by stereopticon slides; special posters were displayed in the industrial plant and advertised on large blackboards at the main entrance; mill superintendents notified their employees either by poster or verbally. In Pittsfield a sign was carried in the streets by a "sandwich man," and reading notices appeared in the Pittsfield and North Adams local papers.

Several conferences were held with officials of manufacturing plants during the week, and after Major Thomson explained the objects of the campaign, co-operation was promised.

Following is a letter received from the large manufacturing plant mentioned, which will give an idea of the interest shown: —

> DEAR DR. STREETER: — I wish to take this opportunity to thank you for the very effective way in which you handled the recent health film, which has made quite an impression on our people. I would like to arrange just as soon as possible to use the film down here during the noon hour for a couple of weeks. I am attaching two photographs with the poster which may interest you, and am also sending two extra photographs for Major Thomson.
>
> At our manufacturing committee meeting this morning, at which all the executives were present who witnessed the film demonstration the other day, the whole matter was discussed in detail, and Mr. C. felt that the work which you and Major Thomson are doing is very important, and we should do everything we possibly can to realize this work to the greatest possible extent.

It was estimated that nearly 1 man in 4, of fifteen years of age or over, attended a showing of the film. The table of figures will give an idea of the population reached.

| TOWN OR CITY. | Population. | Males over 15 Years. | Voters. | Attended Show. |
|---|---|---|---|---|
| Pittsfield, | 39,607 | 13,000 | 10,236 | 2,900 |
| North Adams, | 22,035 | 6,550 | 5,984 | 1,000 |
| Adams, | 13,218 | 4,000 | 3,445 | 1,000 |
| Great Barrington, | 4,600 | 1,250 | 1,375 | 425 |
| Housatonic, | 2,027 | 650 | 379 | 300 |
| Lee, | 4,481 | 1,476 | 1,312 | 400 |
| Stockbridge, | 1,901 | 636 | 512 | 100 |
| Totals, | 87,869 | 27,562 | 23,243 | 6,125 |

It may be of interest to the reader to glance over the story of the motion picture "Fit to Fight" as told by the author and producer of the film, as follows: —

"Fit to Fight" concerns five young men, — "Billy Hale," described as the greatest quarterback who ever failed in mathematics; "Chick Carlton," a gilded youth, who is sneaking through college on one book — his check book; "Kid McCarthy," a pugilist, who has lost his title by training on wine, women and late hours; "Hank Simpson," who is leaving rustic parents in Jonesburg to seek his fortune in the city; and "Jack Garvin," a sporting cigar salesman who mixes business with pleasure.

This quintette is introduced in civilian environment, Billy and Chick at college, where Billy early demonstrates fighting tendencies by "mussing up" a pacifist student.

Kid McCarthy is seen coming from a saloon somewhat the worse for too much liquor. Hank Simpson, an awkward, diffident country boy, is shown breaking home ties in his native town of Jonesburg. His old mother and father have come to the conclusion that it is necessary to use some word of warning to Hank about the temptations of the world into which he is about to venture, so that with much embarrassment the old man takes the lad aside. This is all the social hygiene instruction he is able to give his son: "Jest wanted to warn yew, Hank, to steer clear of any of them wild women." "Aw, I'm wise," responds the bashful Hank in the great wisdom of callow youth.

A few months elapse and war comes. Billy, Jack, Kid, Hank and Chick are shown leading a new life on the same footing. The great leveling influence of military service has placed them shoulder to shoulder in the ranks of an awkward squad.

In their barracks they receive instruction on venereal disease from their company commander. Billy, the trained athlete, realizes the importance of these instructions and listens attentively. Kid Mc-

Carthy also understands its import. Hank, the country boy, is embarrassed by reference to gonorrhea and syphilis, words, which in the vocabulary of his rural friends, were considered shameful and not to be spoken out loud. Chick Carlton and Jack Garvin, however, are alternately bored and amused by the commander's advice. They consider that he is giving them "bunk" when he urges the men to keep away from prostitutes as the only sure method of avoiding venereal disease.

Next, the characters are shown on leave in town. Here they are furnished whiskey by bootleggers; though Billy demurs, he is prevailed upon to indulge when Chick proposes a toast to the day they "can the Kaiser." The result is that the boys are picked up by streetwalkers, with the exception of Billy, who prefers to be considered a mollycoddle rather than accompany a prostitute. Billy's four companions are conducted to a house of prostitution. There Hank is seized by a "harpy," but remembering his father's parting words, resists her advances and finally makes his escape without losing his self-respect.

After this evening in town, Kid McCarthy, having been impressed by the army regulations, takes the prophylactic treatment. Jack Garvin also takes the treatment, but Chick Carlton, who "knows it all," refuses. The aftermath of this "liberty" follows the return to the barracks of the men from a long hike. It develops then that Carlton has a bad case of gonorrhea and Jack Garvin has syphilis. Hank, the innocent country lad, develops a syphilitic lip infection, the result of the kisses of the "harpy" from whom he made his escape. Billy and the Kid alone escape. They have become fast friends, following a grudge fight between them, the culmination of a course of ridicule by the former pugilist who considered the young college athlete a mollycoddle because he declined to have anything to do with the prostitutes. This fight is the turning point in the attitude of the men towards Billy, after the latter has knocked out Kid McCarthy. They realize that clean living is a valuable asset to a fighter.

The picture ends with Billy, now a lieutenant, and Kid McCarthy, a sergeant, leaving for "over there." Back in the base hospital are the "useless slackers" who, through weakness and disobedience of orders, have made themselves a burden upon the government by contracting venereal disease. There, in dejected attitudes are Chick, who is so hopelessly crippled with gonorrheal rheumatism as to necessitate his discharge for disability not incurred in line of duty, and Jack Garvin and Hank Simpson who are being treated for syphilis until they are no longer a menace to their comrades.

In striking contrast is the enthusiastic anticipation of the big work ahead by Billy and the Kid. They stand on the deck of a transport steaming out toward Sandy Hook, watching the fast disappearing sky line of New York; then looking seaward while an expression of stern resolve comes over their faces as they think of what awaits them "over there."

In the motion picture, which was written and produced by a field secretary of the American Social Hygiene Association representing the War Department, Commission on Training Camp Activities, the temptations actually encountered by the man in uniform have been uncompromisingly portrayed. On the other hand, the effects of promiscuous sexual indulgence are presented with a realism that is expected to make the men who see this picture pause and reflect.

## NOTICE REGARDING VACCINE VIRUS.

A number of reports have been received from different parts of the Commonwealth to the effect that the vaccine virus furnished by the State Department of Health during the summer has sometimes failed to take. This experience started with the hot weather in July.

It is well known that heat seriously interferes with the potency of vaccine virus. A few hours' exposure, even at room temperature, during a summer day may be enough to render the vaccine virus impotent. The heat of the post office or the railroad train is probably an important factor in this regard.

All vaccine virus furnished by the Department of Health is carefully tested for purity and potency before it leaves the laboratory at Forest Hills. Recent tests have been made with retained samples of all the lots of vaccine virus given out throughout the summer time. These tests prove that the virus which sometimes failed to take in July and August still gives typical takes when obtained fresh from the laboratory. Thus, 76 primary vaccinations resulted in 76 good takes. (These tests were made in September with lots numbered 534 to 541, inclusive.) This demonstrates that the vaccine virus is still 100 per cent. efficient when fresh. It seems, however, that owing to unusual conditions some of the vaccine virus issued this summer did not withstand the temperature of transportation.

The Department now has a fresh supply of active virus, and it is recommended that if any difficulty is experienced with the material on hand, this be exchanged for the new virus.

M. J. ROSENAU,
*Chief of Division of Biologic Laboratories.*

THE COMMONHEALTH.

Monthly Bulletin of the Massachusetts State Department of Health.

*Sent Free to any Citizen of the State.*

Merrill E. Champion, M.D., Director of Division of Hygiene, Editor.
Room 546, State House, Boston, Mass.

*Practical Patriotism.* — In these times, when there is such a dearth of public health and other nurses, it is encouraging to note that a number of women no longer doing active nursing work are coming forward to do their share towards filling up the ranks. Leominster has three married nurses doing volunteer work, giving one afternoon a week at the clinics, assisting doctors. Paxton has a volunteer nurse from Worcester, who not only assisted the doctor in weighing and measuring fifty babies, but who is also doing follow-up work, giving the use of her automobile for this purpose. Hudson has six married nurses doing volunteer child welfare work. Winchendon has a nurse of wide administrative experience who lives in the town for part of the year, and who has taken a prominent part in the child welfare work. Undoubtedly, many more instances of the same sort could be mentioned. These nurses are as truly "doing their bit" for the country as if they were in France.

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*Conserve Food by Proper Cooking.* — Do you cook? Do you understand the principles of cookery? Does your family get the full value of the food you prepare? Much valuable food is wasted through ignorance of these principles.

Improperly cooked food means a waste of money, a waste of time and a cheated, poorly nourished body.

Do you know that meat, fish, eggs and cheese contain a substance called protein? This substance makes muscle. If heated to a high temperature for a long time protein becomes tough and hard to digest To prevent this do not cook these foods at a high temperature for more than ten minutes; then reduce the temperature. Meat cooked in this way is tender and juicy. Cheese should be heated just long enough to melt it.

Fats are wasted if they are cooked at a high temperature, or if burned. Then they are not well digested, and often cause serious trouble. Fat is also wasted when the water in which fat food is cooked is not allowed to cool and the fat removed.

Starchy foods, on the other hand, should be cooked at a boiling temperature for at least five minutes. High heat is necessary to break open the covering which surrounds the starch grain. If this is not broken the starch will not be digested. Starch must be thoroughly cooked if it is to be digested.

Cornstarch puddings and thickenings require from twenty minutes to half an hour. Cereals from one to three hours.

Much mineral matter is carelessly thrown away. A mineral is a salt. It is soluble in water. It is needed for bones, blood and teeth. Do not throw mineral away. Bake or steam vegetables; if you boil them use that water in soup or sauces. Vegetables are of value chiefly for their minerals. When they are boiled in water and the water thrown away the mineral is wasted.

The very best food can be made unpalatable or indigestible by improper cooking. Food that is not digested is eliminated with waste product.

You are doing your utmost to conserve food. Cook it so well that it will be well digested and not wasted in the body.

A. W. Sandwall.

*Nursing Assistants.* — The State Department of Health is about to appoint eight public health nurses as assistants to the District Health Officers. These assistants will act as official representatives of the District Health Officers, and will relieve them of many of the details connected with the follow-up work of communicable diseases.

The nursing assistants will work in co-operation with the public health nurses of the Division of Hygiene, will make surveys relative to child conservation and communicable diseases, and plan for health demonstrations in various parts of the State.

They will act in an advisory capacity to the public health nurses already employed in the cities and towns of Massachusetts, and will devote particular attention to the needs of the visiting nurses in the more remote parts of the State.

The joint work of these assistants to the District Health Officers and the public health nurses of the Division of Hygiene will be valuable in demonstrating the need of public health nursing to the communities where the services of nurses are not available at the present time.

By means of this co-ordinated effort the following results will be obtained in public health nursing: (*a*) better standards in our present system of public health nursing, and (*b*) the services of a public health nurse in every town in the Commonwealth of Massachusetts. In sparsely settled parts of the State this nursing service will be accomplished by one nurse being employed for several towns.

BERNICE W. BILLINGS.

*Help the Editor to help Your Cause.* — Health officers and others who appreciate the value of newspaper publicity for the furtherance of public improvements should do their part to submit "clean copy." Very often a good cause loses headway because a carelessly prepared news-story has been thrown into the wastebasket by a busy editor. The following suggestions offered by an experienced publicity man are thoroughly practical: —

Typewrite the copy whenever possible.

Double space or triple space between the lines.

Leave plenty of room at the top for a headline.

Leave a half-inch space at the bottom of each page.

Avoid breaking words at the end of lines and sentences at the bottom of pages.

Number each page of manuscript in the center at the top and draw a half circle under the number.

When you write in long hand print all proper names.

Be sure to spell all proper names correctly and to supply the initials necessary to identification.

Use paper of standard typewriter size or smaller.

Sign your name to each communication.

Write only on one side of the sheet.

After the story appears thank the newspaper for printing it, and try to avoid criticism when typographical errors or editorial mistakes are apparent.

CHARLES E. BELLATTY.

# EFFICIENCY AND THE BABY.

By Winifred Rand, R.N., Superintendent of Nurses, Baby Hygiene Association, Boston.

It is only when ignorance is bliss that it is folly to be wise, and it is seldom that ignorance *is* bliss. We certainly do not believe that in caring for babies ignorance is ever anything but a horrible menace, claiming as its due the sacrifice of life. On death certificates, under the heading "cause of death," how often, if the truth were told, should we put "Ignorance on the part of the mother"? We ought to be able to say "never" but unfortunately death does sometimes come because the mother "did not know."

In this day, when the word efficiency is only exceeded in its popularity by the word camouflage, we still allow the care of the baby to be left to the ignorant and therefore inefficient. Life is always, and especially in these days, too precious a commodity to be handled carelessly and so wasted. Intelligence plus knowledge is a great factor in stopping waste. "And the moral of that is," spread knowledge, increase intelligence. The question is, how?

The Baby Hygiene Association of Boston has answered this question as to method in a way that has proved its worth, if measured by its results. They have established in strategic points throughout the city infant welfare stations. The first were in the crowded sections, but as the association has grown it has been felt that education should be available to all, and the aim is to have infant welfare stations so situated throughout the city that, like the public schools, they may be at the disposal of all potential citizens.

These stations, of which there are at present 16, might be called schools in motherhood. They have as their teachers doctors and nurses, who give individual instruction, the doctor through the weekly or semiweekly conference, and the nurse through her home visits. The mother brings her baby to the conference, where it is weighed and examined, and where she may receive the advice of the doctor in regard to its feeding and care. Breast feeding is, of course, encouraged as far as possible; bottle feeding is prescribed when necessary. Education is a slow process; the care of the baby is not learned in that first visit of the mother to the conference, but the subsequent and frequent visits of the nurse in the home give the opportunity for demonstrating and explaining to the mother, and helping her meet her individual problem. Conference attendance is urged that the progress of the baby may be watched by the doctor, and the mother advised accordingly. The two parts of the work are absolutely interdependent. The conference without the follow-up work of the nurse would lose more than half its value; the nurse, deprived of the backing of the conference physician, could not possibly be the potent factor in the home that she is with his support.

Twenty-one nurses are working with the Baby Hygiene Association, trying to maintain the health of 3,280 Boston babies, for our slogan is "Prevention rather than Cure." Our system of education has proved itself practical and effective. Between 1901 and 1905 the Boston death rate of babies under one year per 1,000 births was 138.41; in 1917, when the Baby Hygiene Association was nine years old, the death rate was 98.91, and we are justified in believing that the association has done its bit in helping to bring this about. We grow steadily, and our mothers are our best advertisers.

As a nation we pride ourselves on the opportunities offered for education; as education of a most important type this work should become national. The pamphlet or book on the care of the baby is an excellent thing, but may be likened to a correspondence school, and as a system of education the correspondence school is not ideal.

Health is surely the right of the individual, and health maintained rather than regained after lost is an economic asset for which it is well worth striving.

## THE IMPORTANCE OF RECREATION IN WAR TIME.

By Bretta Crapster Lucas, Field Secretary, Playground and Recreation Association of America, New York.

Now that the State babies are weighed and measured we may say "So far, so good." The next step is to see that all the children have adequate opportunity for good wholesome play.

With more fathers and brothers in service, with mothers and sisters in industrial work or busy with Red Cross, with the whole country busier than ever before, we find the children left with less and less mature supervision. Nothing is more dangerous to the normal development of boys and girls than the nervous strain under which we are all now living.

Recreation is re-creation through relaxing nervous tension. Play is the natural recreation for children and young people.

It is therefore a war-time responsibility that each community provide adequate, wholesome recreation facilities for its citizens, young and old.

Realizing the seriousness of this need the Children's Bureau at Washington is directing a nation-wide recreational campaign. There are a few definite plans suggested for the immediate future. Every community is being urged to develop its playgrounds under competent play leadership; to encourage athletic leagues; to enlarge the membership and activities of its boys' and girls' clubs, its Boy Scouts and Camp Fire Girls. The school boards are being asked to open at least one building this winter for neighborhood center activities, such as community sings, school orchestras, dramatic leagues and folk dancing.

The first week in September has been set aside for a patriotic play week, with one day for games and sports, one day for the boys and girls to be given the athletic badge test, one for fraternal order and club picnics, one for a pageant, and so on through the week, ending with Sunday, when it is hoped that the priests and pastors will talk on "The Godliness of Play."

The Playground and Recreation Association of America is co-operating with the Federal Bureau to make this campaign effective.

Mrs. Bretta Crapster Lucas, a field secretary of the association, has been loaned to the State of Massachusetts, and is to be here several months helping the communities study, and answering their recreational problems.

The aim of the State should be a year-round municipally supported play system for every city of over 10,000 population, and wholesome play for every community however small.

England and France are saying, "At whatever cost to our treasury let us give a normal life to our boys and girls." Can America say less?

## REPORT OF DIVISION OF FOOD AND DRUGS.

During the month of July, 1918, samples were collected in 50 cities and towns.

There were 950 samples of milk examined, of which 395 were below the legal standard, 31 samples were skimmed milk not properly labeled, and 53 samples contained added water.

There were 126 samples of food examined, of which the following were adulterated: 3 samples of cream below the legal standard, 1 sample of sausage containing coloring matter, and 6 samples of vinegar low in acid.

There were 13 samples of drugs examined, of which 5 were adulterated. These consisted of 3 samples of spirit of nitrous ether and 2 samples of spirit of peppermint deficient in the active ingredient.

The police departments submitted 5 samples of liquor and 22 samples of poisons for examination.

There were 10 convictions for violation of the laws, $575 in fines being imposed. Leo E. Bookehin of Raynham, on two counts, John Risgin of Carlisle, Irving A. Seaver of Townsend, on two counts, and Bert M. Frye of Leominster were convicted for violation of the milk laws. Leo E. Bookchin of Raynham appealed one of his cases. Joseph D. Flione and Pantel N. Themo of Boston, on two counts each, and Ismial Hamad of Lowell were convicted for violation of the food laws. One of Joseph D. Flione's cases was held for the grand jury; on the other he appealed, and Pantel N. Themo appealed both of his cases.

There were 12 confiscations made, consisting of 4 cases of eggs unfit for food, 11,213 pounds of decomposed pork loins, 91 pounds of decomposed goat legs, 315 pounds of tainted beef, 330 pounds of uninspected and unstamped beef, 448 pounds of sour and moldy frankforts, sausages and miscellaneous prepared meats, 45 pounds of tainted liver and 420 pounds of tainted veal.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

Nine samples of milk containing added water, produced by Joseph E. Banville of Swansea; 4 samples of skimmed milk not properly labeled, produced by John Risgin of Carlisle; 12 samples of milk containing added water, produced by William Tompkins of Marlborough; 1 sample of milk containing added water, produced by Warren W. Seaver of Marlborough; 2 samples of milk containing added water, produced by Frank LeBlanc of North Dighton; 1 sample of milk containing added water, produced by Felix Lidoviez of South Dighton; and 3 samples of cream below the legal standard, from Bert M. Frye of Leominster.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of June, 1918: 3,488,920½ dozens of case eggs; 263,958 pounds of broken-out eggs; 8,011,148 pounds of butter; 854,840 pounds of poultry; 115 pounds of game; 7,410,552 pounds of fresh meat and fresh meat products; and 8,415,207 pounds of fresh food fish.

There was on hand in storage on July 1, 1918, 18,883,611 dozens of case eggs, 535,767 pounds of broken-out eggs, and 8,063,252 pounds of butter.

## Quarterly Report on Slaughtering.

A compilation of the quarterly reports on slaughtering for the quarter ending July 1 shows that during that period 33,944 animals were inspected by the local inspectors of slaughtering throughout the State. Of that number, 5,605 were cattle, 22,351 were calves, 5,782 were hogs and 206 were sheep. In addition to a number of parts which were condemned, where it was not necessary to condemn the entire carcass, 418 animals were condemned. Of this number, 109 were cattle, 277 were calves, 27 were hogs and 5 were sheep. There were 237 calves condemned on account of immaturity; 101 animals on account of tuberculosis, of which 87 were cattle, 3 were calves and 11 were hogs; 6 hogs on account of hog cholera; 4 sheep on account of nodular disease; 4 animals on account of septicæmia, of which 3 were cattle and 1 was a hog; 6 animals on account of emaciation, of which 2 were cattle, 1 was a calf and 3 were hogs; 19 calves on account of weak condition; 13 animals on account of bruises and injuries, of which 5 were cattle, 7 were calves and 1 was a hog. The remaining 17 animals were condemned on account of gastritis, enteritis, peritonitis, cirrhosis of liver, jaundice, diarrhœa, pyæmia, difficult parturition, advanced pregnancy, stillbirth, milk fever, metritis, strangulation and died otherwise than by slaughter.

These figures as compared with the figures for the same period in 1917 show a decrease in all the carcasses inspected, except sheep, amounting to about 300 cattle, about 5,100 calves and about 1,600 hogs. The number of sheep inspected is about the same. The per cent. of condemnations in cattle and hogs is comparatively the same, but the number of condemnations in calves is materially less, there being but 277 condemned out of 22,351 for this quarter, and for the same quarter last year there were 655 condemned out of 27,525.

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF JULY, 1918.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of July, 1918: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, . . . | 546 | 52 | 261 | 78 | 155 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, . . . . . | 310 | 77 | 233 | |
| *Typhoid fever (Widal test), . . | 167 | 57 | 95 | 15 |
| Typhoid fever (culture test), . | 41 | – | 41 | |
| Malaria, . . . . . . | 7 | – | 7 | |
| Gonorrhea, . . . . . . | 155 | 34 | 121 | |
| Miscellaneous, . . . . | 21 | – | – | |

Total number of examinations made, 1,247.

## RÉSUMÉ OF COMMUNICABLE DISEASES FOR JULY, 1918.

### General Prevalence.

The reported cases of communicable diseases for the month of July shows a marked decrease over all previous months of the year, the total number for the month being 6,270, with a case rate per 100,000 of 159.9. The total number of cases reported for June was 9,044, making a decrease for July of 2,774 cases.

This decrease was evident in all forms of communicable disease, with the exception of typhoid fever, which increased from 64 cases in June to 112 in July. This increase is, of course, due to the seasonable agencies which make the infection more easily acquired and communicated. No outbreak of importance occurred during the month.

*Diphtheria.* — This disease was reported in 453 cases, giving the lowest total for any month during the year. The incidence was mainly in the larger cities and towns, and this fact brings forth the query, "Why is diphtheria allowed to exist in such large proportions, with its relatively high mortality rate, when it is one of the few diseases which can be diagnosed early and correctly by the laboratory, and for which specific medication is available?" It is hoped that early recognition of the disease, efficient isolation of the patient, and effective quarantine of contacts will bring a more marked decrease in the number of cases of diphtheria.

*Measles.* — The greatest decrease in numbers of cases reported is in this condition. The total measles cases for July was 1,962 as compared with June's 3,664, — a decrease of 1,702. It is noted that the spread of measles is now extending from urban to rural communities, conveyed by vacation travelers with unrecognized cases, or by visitation between the inhabitants of these places.

*Scarlet Fever.* — Scarlet fever was reported in 200 cases in July as compared with 289 cases in June, — a decrease of 89 cases.

*Whooping Cough.* — The prevalence of whooping cough continues to be high, and its incidence is widely scattered throughout the State. The prevention of infection becomes in a large measure a matter of educating those responsible for the well-being of their children. Authorities in preventive medicine are fully in accord with the United States Public Health Service's suggestion relative to the communicability of whooping cough, which is as follows: "Whooping cough is particularly communicable in the early catarrhal stages, before the characteristic whoop makes the clinical diagnosis possible. Communicability probably persists not longer than two weeks after the characteristic whoop, or approximately four weeks after onset of catarrhal symptoms." If children are safeguarded from infection during this four weeks' period the morbidity rate for whooping cough can be reduced.

*Typhoid Fever.* — Typhoid fever alone shows an increase for the month. There were 112 cases reported for July as compared with 64 for June. The appended study of all cases of typhoid fever, reported from January 1 to August 1 occurring in the age groups of one to eleven, was made to ascertain what percentage of typhoid was verified by a positive Widal examination. It will be noted that nearly 50 per cent. of these cases either had no blood examination, or furnished no information regarding Widals upon the history sheet.

One cannot help but wonder why the laboratory is not used more freely when positive Widal reactions would facilitate the diagnosis of typhoid fever, or aid in the differentiation of simulating conditions.

*Cases of Typhoid Fever reported from January 1 to August 1, — Ages One to Ten Years, Inclusive.*

| WIDAL. | Under 1 Year. | 1 Year. | 2 Years. | 3 Years. | 4 Years. | 5 Years. | 6 Years. | 7 Years. | 8 Years. | 9 Years. | 10 Years. | Totals. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Positive, | – | 2 | 4 | 2 | 4 | 5 | 4 | 5 | 7 | 9 | 6 | 48 |
| Atypical, | – | – | 1 | – | – | – | 1 | – | – | – | – | 2 |
| Negative, | – | – | – | – | – | 1 | – | – | – | – | 1 | 2 |
| None taken, | 1 | 1 | – | – | 1 | – | 2 | 3 | 1 | – | – | 9 |
| No information, | – | – | 1 | – | 3 | 2 | 4 | 4 | 7 | 3 | 3 | 27 |
| Totals, | 1 | 3 | 6 | 2 | 8 | 8 | 11 | 12 | 15 | 12 | 10 | 88 |

*Tetanus.* — There were four cases reported during the month, none, however, attributable to the Fourth of July celebration. One case occurred in an eleven-day-old infant; two received puncture wounds; and one was not ascertained.

### RARE DISEASES.

*Anterior poliomyelitis* was reported from Beverly, 1; Boston, 1; Cambridge, 1; Easthampton, 1; Medford, 1; New Bedford, 3; Newton, 1; and Warren, 1; total, 10.

*Anthrax* was reported from Brockton, 1; Methuen, 1; and Woburn, 2; total, 4.

*Dog bite requiring anti-rabic treatment* was reported from Clinton, 1.

*Dysentery* was reported from Adams, 1; Boston, 3; Cambridge, 1; Danvers, 1; Fall River, 1; Greenfield, 2; Melrose, 2; Middleborough, 2; New Bedford, 2; Shirley, 7; Somerville, 1; Sutton, 1; and Worcester, 6; total, 30.

*Epidemic cerebrospinal meningitis* was reported from Andover, 1; Belmont, 1; Boston, 5; Cambridge, 1; Camp Devens, 1; Chelsea, 2; Fall River, 1; Fitchburg, 1; Greenfield, 1; Haverhill, 1; Lawrence, 2; Milford, 1; Norwood, 1; Somerville, 2; Springfield, 2; Waltham, 1; and Winthrop, 1; total, 25.

*Malaria* was reported from Blackstone, 3; Boston, 4; Camp Devens, 3; Dedham, 3; Fall River, 2; and Lynn, 1; total, 16.

*Pellagra* was reported from Everett, 1.

*Septic sore throat* was reported from Beverly, 1; Hudson, 1; and Watertown, 1; total, 3.

*Smallpox* was reported from Boston, 1.

*Tetanus* was reported from Great Barrington, 1; Peabody, 1; and Worcester, 2; total, 4.

*Trichinosis* was reported from Lynn, 1.

*Trachoma* was reported from Boston, 6; Chelsea, 1; and Gloucester, 1; total, 8.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | June, 1918. | July, 1918. | July, 1917. |
|---|---|---|---|
| Total cases, | 9,044 | 6,270 | 4,580 |
| Case rate per 100,000 population, | 230.7 | 159.9 | 119.0 |

### *Certain Prevalent Diseases.*

| | June, 1918. | July, 1918. | July, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[1] |
|---|---|---|---|---|
| Diphtheria: — | | | | Fall River, (9) 15<br>Abington, (0) 11<br>Cambridge, (20) 44<br>Malden, (12) 20 |
| Total cases, | 473 | 453 | 597 | |
| Case rate per 100,000 population, | 12.1 | 11.6 | 15.5 | |
| Lobar pneumonia: — | | | | |
| Total cases, | 200 | 140 | 80 | |
| Case rate per 100,000 population, | 5.1 | 3.6 | 2.1 | |
| Measles: — | | | | Norwood, (2) 16<br>Walpole, (3) 38<br>Everett, (9) 16<br>Gloucester, (2) 23<br>Haverhill, (7) 102<br>Manchester, (0) 11<br>Peabody, (7) 52<br>Andover, (3) 42<br>Lawrence, (14) 106<br>Lowell, (30) 112<br>Medford, (4) 35<br>Waltham, (27) 38<br>Wilmington, (2) 27<br>Ashburnham, (0) 22<br>Natick, (2) 34<br>Webster, (0) 19<br>Clinton, (2) 20<br>Fitchburg, (16) 125<br>Lancaster, (0) 15<br>Northampton, (8) 20<br>Montague, (0) 10 |
| Total cases, | 3,664 | 1,962 | 1,347 | |
| Case rate per 100,000 population, | 93.4 | 50.0 | 35.0 | |
| Scarlet fever: — | | | | Brockton, (4) 12 |
| Total cases, | 289 | 200 | 241 | |
| Case rate per 100,000 population, | 7.4 | 5.1 | 6.3 | |
| Typhoid fever: — | | | | |
| Total cases, | 64 | 112 | 109 | |
| Case rate per 100,000 population, | 1.6 | 2.9 | 2.8 | |
| Whooping cough: — | | | | New Bedford, (6) 23<br>Taunton, (0) 22<br>Boston, (124) 178<br>Cambridge, (14) 72<br>Quincy, (0) 18<br>Malden, (2) 18<br>Framingham, (6) 20<br>Newton, (8) 25<br>Winchendon, (0) 25<br>Greenfield, (1) 16 |
| Total cases, | 829 | 781 | 344 | |
| Case rate per 100,000 population, | 21.1 | 19.9 | 8.9 | |
| Tuberculosis, pulmonary: — | | | | |
| Total cases, | 772 | 636 | 821 | |
| Case rate per 100,000 population, | 19.7 | 16.2 | 21.3 | |
| Tuberculosis, other forms: — | | | | |
| Total cases, | 54 | 84 | 65 | |
| Case rate per 100,000 population, | 1.4 | 2.1 | 1.7 | |

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[1] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

## INTERSTATE RECIPROCAL NOTIFICATION IN JULY, 1918.

| Disease and Locality of Notification. | Health Authority referred to — | Why referred. |
|---|---|---|
| Gonorrhea: Haverhill, | State Board of Health, Burlington, Vt. | Patient said to be at Fort Ethan Allen, Vermont. |
| Gonorrhea: Haverhill, | State Board of Health, Columbia, S. C. | Patient said to have enlisted in army and to be at Camp Jackson, South Carolina. |
| Trachoma: Camp Green, Charlotte, N. C. | Massachusetts State Department of Health. | Discharged from Camp Greene because of defective vision (trachoma) to home at Chief Street, Boston. |
| Trachoma: Fort Slocum, New York. | Massachusetts State Department of Health. | Discharged from Fort Slocum because of trachoma to home in Peabody, Mass. |
| Tuberculosis: Camp Devens, | State Board of Health, Concord, N. H. | Discharged from Camp Devens to home in Manchester, N. H. |
| Tuberculosis: Camp Devens, | State Department of Health, Augusta, Me. | Discharged from Camp Devens to home in Bath, Me. |
| Tuberculosis: Camp Devens, | State Board of Health, Burlington, Vt. | Discharged from Camp Devens to home in St. Johnsbury, Vt. |
| Tuberculosis: Camp Devens, | State Board of Health, Burlington, Vt. | Discharged from Camp Devens to home in Barre, Vt. |
| Tuberculosis: Camp Devens, | State Board of Health, Columbia, S. C. | Discharged from Camp Devens to home in Lancaster, S. C. |
| Tuberculosis: Camp Devens, | State Department of Health, Hartford, Conn. | Discharged from Camp Devens to home in New Haven, Conn. |
| Tuberculosis: Camp Devens, | State Board of Health, Concord, N. H. | Discharged from Camp Devens to home in Manchester, N. H. |
| Tuberculosis: Camp Devens, | State Department of Health, Augusta, Me. | Discharged from Camp Devens to home in Burlington, Me. |
| Tuberculosis: Camp Devens, | State Department of Health, Augusta, Me. | Discharged from Camp Devens to home in Freeport, Me. |
| Tuberculosis: Camp Devens, | State Board of Health, Providence, R. I. | Discharged from Camp Devens to home in Newport, R. I. |
| Tuberculosis: Camp Devens, | State Department of Health, Albany, N. Y. | Discharged from Camp Devens to home in Loomis, N. Y. |
| Tuberculosis: Camp Devens, | Provincial Board of Health, Victoria, B. C. | Discharged from Camp Devens to home in Hope, B. C. |
| Typhoid fever: Clinton, | State Department of Health, Trenton, N. J. | Patient came from Newark, N. J., day previous to onset. |
| Typhoid fever: Clinton, | State Department of Health, Augusta, Me. | Patient came from Wayne, Me., June 19. Onset July 5. |

## OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES FOR THE MONTH OF JUNE, 1918.

| Disease. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Anthrax, | Handling hides, | Woburn, | M | 38 | W |
| Anthrax, | Handling hides, | Woburn, | M | 29 | W |
| Anthrax, | Shoe dealer, | Brockton, | M | 47 | W |
| Anthrax, | Steam fitter, | Lawrence, | M | 16 | W |
| Lead poisoning, | Painter, | Boston, | M | 32 | W |

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, | 3,920,988 | 356 | – | 473 | 30 | 36 | 20 | 490 | – | 200 | 113 | 3664 | 80 |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, | 793,471 | 62 | – | 158 | 15 | 14 | 9 | 45 | – | 25 | 24 | 913 | 8 |
| 4 | Cities, 150,000–200,000. | | | | | | | | | | | | | |
| 5 | Worcester, | 173,419 | 2 | – | 16 | – | 3 | – | 5 | – | 15 | 8 | 31 | – |
| 6 | Cities, 100,000–150,000. | *578,593* | *45* | – | *73* | *5* | *4* | *2* | *26* | – | *38* | *11* | *378* | *12* |
| 7 | Fall River, | 128,317 | 8 | – | 8 | – | – | – | 5 | – | 4 | – | 18 | 2 |
| 8 | New Bedford, | 117,855 | 1 | – | 3 | 1 | – | – | – | – | 4 | – | 25 | 4 |
| 9 | Springfield, | 111,983 | 12 | – | 16 | 1 | – | 1 | 14 | – | 15 | 2 | 97 | 1 |
| 10 | Cambridge, | 111,379 | 24 | – | 41 | 1 | 2 | – | 5 | – | 13 | 3 | 141 | 4 |
| 11 | Lowell, | 109,059 | – | – | 5 | 2 | 2 | 1 | 2 | – | 2 | 6 | 97 | 1 |
| 12 | Cities, 50,000–100,000. | *569,719* | *25* | – | *63* | *1* | *5* | *3* | *99* | – | *31* | *21* | *783* | *30* |
| 13 | Lynn, | 99,952 | 2 | – | 9 | – | – | – | 29 | – | 9 | 3 | 70 | – |
| 14 | Lawrence, | 93,060 | 4 | – | 12 | – | – | – | 1 | – | 4 | 4 | 396 | 27 |
| 15 | Somerville, | 93,026 | 4 | – | 14 | 1 | – | – | 10 | – | 5 | 2 | 63 | 1 |
| 16 | Brockton, | 65,746 | 2 | – | 3 | – | – | – | 49 | – | 4 | 1 | 32 | – |
| 17 | Holyoke, | 62,796 | – | – | – | – | – | – | 1 | – | 1 | 5 | 7 | 1 |
| 18 | Haverhill, | 52,873 | 4 | – | 7 | – | – | – | 8 | – | 2 | 2 | 57 | – |
| 19 | Malden, | 51,798 | 1 | – | 15 | – | 5 | 2 | 1 | – | 2 | 2 | 143 | – |
| 20 | Chelsea, | 50,468 | 8 | – | 3 | – | – | 1 | – | – | 4 | 2 | 15 | 1 |
| 21 | Cities and Towns, 25,000–50,000. | *487,764* | *105* | – | *46* | *1* | *1* | *1* | *77* | – | *10* | *8* | *610* | *9* |
| 22 | Quincy, | 45,827 | 11 | – | 6 | – | – | – | 20 | – | – | 2 | 30 | – |
| 23 | Newton, | 45,234 | 45 | – | 1 | – | – | – | 11 | – | – | – | 14 | – |
| 24 | Pittsfield, | 44,410 | 1 | – | 2 | – | – | – | 2 | – | 3 | 1 | 10 | – |
| 25 | Salem, | 41,082 | 6 | – | 5 | – | – | – | – | – | 2 | – | 94 | 3 |
| 26 | Fitchburg, | 40,830 | 4 | – | – | – | – | 1 | 7 | – | – | – | 177 | 2 |
| 27 | Everett, | 40,435 | 4 | – | 15 | – | – | – | – | – | – | – | 12 | – |
| 28 | Taunton, | 37,381 | – | – | 1 | 1 | – | – | – | – | – | 1 | 5 | 1 |
| 29 | Brookline, | 37,147 | 25 | – | 4 | – | – | – | 11 | – | – | – | 37 | – |
| 30 | Medford, | 35,230 | 1 | – | 7 | – | – | – | 11 | – | 1 | – | 77 | – |
| 31 | Chicopee, | 33,177 | 1 | – | 4 | – | – | – | 1 | – | 1 | – | 10 | 1 |
| 32 | Waltham, | 31,643 | 7 | – | – | – | – | – | 14 | – | 1 | 2 | 140 | 1 |
| 33 | Revere, | 29,643 | – | – | 1 | – | – | – | – | – | – | 2 | – | 1 |
| 34 | Beverly, | 25,725 | – | – | – | – | 1 | – | – | – | 2 | – | 4 | – |
| 35 | Cities and Towns, 10,000–25,000. | *575,996* | *73* | – | *52* | *2* | *2* | *2* | *92* | – | *25* | *21* | *384* | *8* |
| 36 | Gloucester, | 24,529 | – | – | 1 | – | – | – | 1 | – | – | – | 1 | 1 |
| 37 | Northampton, | 23,081 | – | – | 1 | – | – | – | 9 | – | 3 | 1 | 43 | – |
| 38 | North Adams, | 22,045 | – | – | 1 | – | – | – | 2 | – | 1 | – | – | – |
| 39 | Peabody, | 20,489 | 2 | – | 2 | – | – | 1 | – | – | – | – | 75 | – |
| 40 | Attleboro, | 19,933 | – | – | 3 | – | – | – | – | – | – | – | 1 | – |
| 41 | Westfield, | 19,929 | 1 | – | 1 | – | – | – | 5 | – | 2 | – | 1 | – |
| 42 | Watertown, | 18,851 | – | – | – | – | – | – | 1 | – | – | – | 8 | – |
| 43 | Framingham, | 17,728 | 3 | – | – | – | – | – | 5 | – | 1 | 1 | 4 | – |
| 44 | Leominster, | 17,688 | 1 | – | – | – | – | – | 1 | – | 2 | – | 4 | – |
| 45 | Melrose, | 17,627 | 2 | – | 2 | – | – | – | 10 | – | 4 | 1 | 12 | – |
| 46 | Gardner, | 17,451 | – | – | 13 | – | – | – | 8 | – | – | 1 | 2 | – |
| 47 | Arlington, | 17,264 | – | – | 2 | 1 | – | – | 1 | – | – | 1 | 3 | – |
| 48 | Woburn, | 17,116 | – | – | – | – | – | – | 1 | – | – | 2 | 1 | – |
| 49 | Marlborough, | 15,680 | – | – | – | – | 1 | 1 | 7 | – | 1 | – | 9 | – |
| 50 | Methuen, | 15,649 | 1 | – | – | – | – | – | – | – | – | 1 | 32 | 1 |
| 51 | Newburyport, | 15,542 | – | – | – | – | – | – | 2 | – | – | – | 10 | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH,[1] JUNE, 1918.

| 38A | | 38B | | 75A | | 19C | | 7 | | 28-29 | | 30-35 | | 1 | | 38C | | 37 | | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ophthalmia Neonatorum. | | Suppurative Conjunctivitis. | | Trachoma. | | Mumps. | | Scarlet Fever. | | Tuberculosis, Pulmonary. | | Tuberculosis, Other Forms. | | Typhoid Fever. | | Gonorrhea. | | Syphilis. | | Whooping Cough. | | |
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| 113 | - | 30 | - | 11 | - | 472 | 1 | 287 | 6 | 770 | 388 | 54 | 73 | 64 | 13 | 814 | - | 329 | 37 | 829 | 52 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 34 | - | 13 | - | 6 | - | 41 | - | 66 | 2 | 274 | 101 | 17 | 18 | 6 | 2 | 374 | - | 202 | 10 | 219 | 15 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 14 | - | 2 | - | - | - | 1 | - | 5 | - | 32 | 15 | 3 | 4 | - | - | 42 | - | 13 | 1 | 5 | - | 5 |
| *37* | - | *3* | - | *1* | - | *68* | *1* | *23* | *1* | *129* | *78* | *11* | *16* | *25* | *3* | *129* | - | *33* | *3* | *103* | *9* | 6 |
| 10 | - | - | - | - | - | 13 | - | 7 | - | 33 | 15 | 1 | 1 | 16 | - | 25 | - | 7 | 1 | 14 | - | 7 |
| 15 | - | - | - | - | - | 2 | - | 3 | - | 40 | 17 | 6 | 6 | 1 | 1 | 17 | - | 7 | 1 | 9 | 3 | 8 |
| 7 | - | - | - | - | - | 49 | - | 2 | 1 | 19 | 16 | 1 | 1 | 4 | 1 | 49 | - | 8 | - | 34 | 3 | 9 |
| 4 | - | 3 | - | 1 | - | 3 | 1 | 4 | - | 22 | 18 | 2 | 3 | 3 | 1 | 26 | - | 5 | 1 | 43 | 3 | 10 |
| 1 | - | - | - | - | - | 1 | - | 5 | - | 15 | 12 | 1 | 4 | 1 | - | 12 | - | 6 | - | 3 | - | 11 |
| *18* | - | *5* | - | *1* | - | *36* | - | *44* | - | *92* | *31* | *7* | *8* | *13* | *5* | *67* | - | *19* | *2* | *100* | *8* | 12 |
| - | - | 1 | - | - | - | 3 | - | 4 | - | 15 | 4 | 3 | 3 | 3 | - | 11 | - | - | 1 | 19 | 2 | 13 |
| 1 | - | - | - | - | - | 1 | - | 2 | - | 15 | 14 | 3 | 3 | 6 | 3 | 5 | - | 3 | 1 | 24 | 4 | 14 |
| - | - | - | - | 1 | - | 4 | - | 4 | - | 12 | 4 | - | 1 | 2 | - | 11 | - | 4 | - | 17 | - | 15 |
| 6 | - | 1 | - | - | - | 15 | - | 19 | - | 9 | 2 | - | 1 | - | 1 | 6 | - | 7 | - | 8 | - | 16 |
| - | - | - | - | - | - | 1 | - | 1 | - | 12 | - | - | - | 1 | - | 8 | - | - | - | 3 | 2 | 17 |
| 5 | - | 1 | - | - | - | 9 | - | 3 | - | 14 | 3 | - | - | - | - | 17 | - | 3 | - | - | - | 18 |
| 3 | - | 1 | - | - | - | - | - | 5 | - | 7 | 2 | 1 | - | - | 1 | 2 | - | 1 | - | 18 | - | 19 |
| 3 | - | 1 | - | - | - | 3 | - | 6 | - | 8 | 2 | - | - | 1 | - | 7 | - | 1 | - | 11 | - | 20 |
| *3* | - | *3* | - | - | - | *28* | - | *38* | *1* | *80* | *28* | *7* | *9* | *6* | *1* | *56* | - | *16* | *7* | *168* | *7* | 21 |
| - | - | - | - | - | - | 5 | - | 3 | - | 7 | 2 | - | - | - | - | 6 | - | 1 | - | 9 | - | 22 |
| - | - | - | - | - | - | 2 | - | 1 | - | 5 | 2 | - | 1 | 1 | 1 | 5 | - | 2 | - | 62 | 1 | 23 |
| 2 | - | - | - | - | - | - | - | 11 | - | 8 | 1 | 1 | 2 | - | - | 2 | - | - | 1 | 6 | - | 24 |
| - | - | - | - | - | - | 2 | - | 1 | - | 6 | 2 | 1 | - | - | - | 9 | - | 2 | - | 1 | - | 25 |
| - | - | 1 | - | - | - | - | - | 2 | - | 3 | 3 | 2 | - | - | - | 8 | - | 2 | - | 3 | - | 26 |
| - | - | - | - | - | - | - | - | 4 | - | 6 | 2 | - | 1 | - | - | 3 | - | - | - | 2 | - | 27 |
| - | - | - | - | - | - | - | - | 9 | 1 | 11 | 7 | 1 | - | 2 | - | 7 | - | - | 6 | 10 | 2 | 28 |
| - | - | - | - | - | - | 11 | - | 1 | - | 7 | 4 | - | - | 1 | - | 2 | - | - | - | 57 | - | 29 |
| - | - | 1 | - | - | - | - | - | 4 | - | 6 | 3 | 1 | - | - | - | 3 | - | 1 | - | 7 | 1 | 30 |
| - | - | - | - | - | - | 5 | - | 1 | - | 4 | 1 | - | 3 | - | - | 1 | - | - | - | 3 | - | 31 |
| 1 | - | 1 | - | - | - | 2 | - | - | - | 3 | 1 | 1 | 2 | - | - | 4 | - | 1 | - | 8 | 1 | 32 |
| - | - | - | - | - | - | - | - | - | - | 7 | - | - | - | - | - | 5 | - | 4 | - | - | 2 | 33 |
| - | - | - | - | - | - | 1 | - | 1 | - | 7 | - | - | - | 2 | - | 1 | - | 3 | - | - | - | 34 |
| *2* | - | *3* | - | *3* | - | *71* | - | *30* | - | *74* | *49* | *6* | *9* | *8* | *1* | *39* | - | *13* | *8* | *76* | *5* | 35 |
| - | - | - | - | 1 | - | - | - | - | - | 7 | 2 | - | 1 | - | - | - | - | - | - | 4 | - | 36 |
| - | - | - | - | 1 | - | 1 | - | - | - | 1 | 6 | - | 1 | - | - | - | - | - | 5 | 2 | - | 37 |
| - | - | - | - | - | - | 5 | - | - | - | 3 | 6 | - | - | - | - | - | - | - | - | - | - | 38 |
| - | - | 1 | - | 1 | - | - | - | - | - | 2 | - | 2 | 2 | - | - | 2 | - | 1 | - | - | - | 39 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | 1 | 40 |
| - | - | 1 | - | - | - | 19 | - | 3 | - | 4 | 7 | - | - | - | - | - | - | 1 | - | 2 | - | 41 |
| - | - | - | - | - | - | 1 | - | - | - | - | - | - | 1 | - | - | 2 | - | 1 | - | 5 | - | 42 |
| - | - | - | - | - | - | 1 | - | 1 | - | 3 | - | - | - | - | - | 1 | - | - | - | 20 | - | 43 |
| - | - | - | - | - | - | - | - | - | - | 7 | 1 | 1 | - | - | - | 4 | - | - | - | 6 | - | 44 |
| - | - | - | - | - | - | - | - | 3 | - | 4 | 3 | - | - | 1 | 1 | - | - | - | - | 2 | - | 45 |
| - | - | - | - | - | - | - | - | - | - | 2 | 1 | - | - | - | - | 2 | - | 2 | - | 2 | 1 | 46 |
| - | - | - | - | - | - | - | - | 1 | - | 4 | 2 | 1 | 1 | 1 | - | 3 | - | 1 | - | 1 | - | 47 |
| - | - | - | - | - | - | - | - | - | - | 3 | 1 | - | - | 5 | - | - | - | - | - | 4 | - | 48 |
| - | - | - | - | - | - | 2 | - | - | - | 2 | 2 | - | - | - | - | - | - | 1 | - | - | - | 49 |
| - | - | - | - | - | - | - | - | - | - | - | 2 | 1 | - | - | - | - | - | - | - | 8 | 1 | 50 |
| - | - | - | - | - | - | 12 | - | - | - | 4 | 2 | - | - | - | - | 3 | - | - | - | 5 | - | 51 |

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of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them for

### Cases and Deaths from Diseases Dangerous

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken Pox. |  | 9 Diphtheria. |  | 61A Ep. Cerebrospinal Meningitis. |  | 19B German Measles. |  | 92 Lobar Pneumonia. |  | 6 Measles. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 15,255 | – | – | – | – | – | – | – | – | – | – | 4 | **2** |
| 53 | Weymouth, | 14,659 | – | – | – | – | – | – | – | – | – | **1** | – | – |
| 54 | Winthrop, | 14,443 | 13 | – | 6 | – | – | – | 2 | – | – | – | 10 | – |
| 55 | Milford, | 14,088 | – | – | 1 | – | – | – | – | – | 3 | **1** | 7 | **1** |
| 56 | Greenfield, | 14,028 | 33 | – | – | – | – | – | 12 | – | 1 | – | 3 | – |
| 57 | Wakefield, | 13,664 | – | – | 3 | – | – | – | – | – | – | – | – | – |
| 58 | Plymouth, | 13,430 | – | – | 2 | – | – | – | 1 | – | – | – | – | – |
| 59 | Adams, | 13,340 | – | – | – | – | – | – | – | – | 1 | – | 1 | – |
| 60 | Clinton, | 13,266 | 1 | – | – | – | – | – | 1 | – | – | **1** | 21 | – |
| 61 | Webster, | 13,242 | – | – | 1 | – | – | – | 1 | – | – | **3** | 7 | **1** |
| 62 | Norwood, | 12,879 | 1 | – | – | – | – | – | 1 | – | – | **1** | 37 | **1** |
| 63 | West Springfield, | 12,696 | 1 | – | – | – | – | – | 1 | – | – | – | 3 | **1** |
| 64 | Danvers, | 12,309 | 1 | – | 1 | – | – | – | 1 | – | 3 | **2** | 8 | – |
| 65 | Dedham, | 12,172 | 3 | – | 2 | – | – | – | – | – | – | **1** | 12 | – |
| 66 | Natick, | 11,924 | – | – | 1 | – | – | – | – | – | 1 | **1** | 44 | – |
| 67 | Saugus, | 11,625 | 1 | – | – | – | – | – | – | – | – | **1** | 1 | – |
| 68 | Easthampton, | 10,692 | – | – | 8 | **1** | – | – | – | – | – | – | 10 | – |
| 69 | Athol, | 10,582 | 2 | – | – | – | – | – | 1 | – | – | – | 2 | – |
| 70 | Bridgewater, | 10,468 | 3 | – | 1 | – | – | – | – | – | 2 | **1** | – | – |
| 71 | Winchester, | 10,451 | 4 | – | – | – | 1 | – | 11 | – | – | – | 1 | – |
| 72 | Braintree, | 10,162 | – | – | – | – | – | – | 7 | – | – | – | 2 | – |
| 73 | Palmer, | 10,019 | – | – | – | – | – | – | – | – | – | – | 5 | – |
| 74 | Towns, 5,000–10,000. | *346,607* | *25* | – | *34* | *2* | *3* | – | *117* | – | *10* | *9* | *252* | *1* |
| 75 | Towns, 2,500–5,000. | *182,889* | *4* | – | *12* | – | – | *1* | *14* | – | *2* | *4* | *183* | *4* |
| 76 | Towns under 2,500. | *212,530* | *15* | – | *18* | *3* | – | – | *15* | – | *6* | *1* | *61* | – |
| 77 | State Infirmary, |  | – | – | – | – | – | – | – | – | *2* | *1* | *4* | *7* |
| 78 | Camp Devens, |  | – | – | *1* | *1* | *4* | *2* | – | – | *36* | *5* | *65* | *1* |

In addition to the above there occurred 6 cases of anterior poliomyelitis, 1 in Boston, 1 in Fall River,
of anthrax, 1 in Boston and 2 in Winchendon; 2 cases of dog bite requiring anti-rabic treatment, 1 in Me-
bridge, 1 in Easthampton, and 1 in Fall River; 2 cases of leprosy in Boston; 5 cases of malaria, 1 in Boston,
of pellagra, 1 in Boxford, 1 in Foxborough, 1 in Northampton, 1 in Taunton, and 2 in Worcester, with
tetanus, 1 in Boston, 1 in Salem, and 1 in Worcester, with 4 deaths, 1 in Boston, 1 in Peabody, 1 in Prov-
1 in Lowell, 1 in Medford, 1 in Newburyport, 1 in Salem, and 1 in Somerville, with 2 deaths, 1 in New-

## TO THE PUBLIC HEALTH — Concluded.

| 38A Ophthalmia Neonatorum. |  | 38B Suppurative Conjunctivitis. |  | 75A Trachoma. |  | 19C Mumps. |  | 7 Scarlet Fever. |  | 28-29 Tuberculosis, Pulmonary. |  | 30-35 Tuberculosis, Other Forms. |  | 1 Typhoid Fever. |  | 38C Gonorrhea. |  | 37 Syphilis. |  | 8 Whooping Cough. |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| - | - | - | - | - | - | - | - | - | - | 3 | 2 | - | - | - | - | - | - | - | - | - | - | 52 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 53 |
| - | - | - | - | - | - | 6 | - | 2 | - | 3 | - | - | - | - | - | - | - | - | - | 1 | - | 54 |
| - | - | - | - | - | - | - | - | 1 | - | - | 2 | - | - | - | - | 1 | - | - | - | 3 | 1 | 55 |
| - | - | - | - | - | - | 3 | - | 1 | - | 1 | 1 | 1 | 1 | - | - | 1 | - | - | - | 1 | - | 56 |
| - | - | - | - | - | - | - | - | 3 | - | 5 | 1 | - | 1 | - | - | - | - | 1 | - | - | - | 57 |
| - | - | - | - | - | - | - | - | 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | 58 |
| - | - | - | - | - | - | - | - | 1 | - | 2 | - | - | - | - | - | - | - | - | - | 2 | - | 59 |
| - | - | - | - | - | - | - | - | - | - | 1 | 4 | - | - | - | - | 1 | - | 1 | - | - | - | 60 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | - | 1 | - | - | - | 61 |
| - | - | - | - | - | - | 1 | - | 1 | - | 1 | - | - | - | - | - | 1 | - | - | - | - | - | 62 |
| - | - | - | - | - | - | 2 | - | 1 | - | - | 1 | - | - | - | - | 1 | - | - | - | - | - | 63 |
| 1 | - | 1 | - | - | - | 15 | - | - | - | 3 | - | - | 1 | - | - | 1 | - | 2 | 3 | 1 | - | 64 |
| - | - | - | - | - | - | 1 | - | 1 | - | 3 | - | - | - | - | - | - | - | - | - | 2 | 1 | 65 |
| - | - | - | - | - | - | 2 | - | 1 | - | - | - | - | - | - | - | 5 | - | - | - | 4 | - | 66 |
| - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | 1 | - | - | - | - | - | 67 |
| - | - | - | - | - | - | - | - | 1 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 68 |
| 1 | - | - | - | - | - | - | - | 2 | - | 2 | - | - | - | - | - | 3 | - | - | - | - | - | 69 |
| - | - | - | - | - | - | - | - | 3 | - | - | - | - | - | 1 | - | 1 | - | 1 | - | - | - | 70 |
| - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 71 |
| - | - | - | - | - | - | - | - | 2 | - | 1 | 1 | - | - | - | - | - | - | - | - | 1 | - | 72 |
| - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | 73 |
| *3* | - | - | - | - | - | *29* | - | *24* | *2* | *34* | *26* | *1* | *2* | *3* | - | *16* | - | *4* | - | *99* | *2* | 74 |
| *1* | - | - | - | - | - | *18* | - | *26* | - | *31* | *11* | *1* | *5* | *2* | *1* | *12* | - | *9* | *1* | *16* | *4* | 75 |
| *1* | - | - | - | - | - | *15* | - | *32* | - | *8* | *25* | *1* | *2* | - | - | *68* | - | *18* | *2* | *42* | *2* | 76 |
| - | - | *1* | - | - | - | - | - | - | - | *16* | *24* | - | *1* | *1* | - | *11* | - | *2* | *3* | *1* | - | 77 |
| - | - | - | - | - | - | *165* | - | *1* | - | - | - | - | - | - | - | - | - | - | - | - | - | 78 |

1 in Milford, 1 in Northampton, 1 in Somerville, and 1 in Springfield, with 1 death in Boston; 3 cases
thuen and 1 in North Attleborough; 4 cases of dysentery in Boston, with 4 deaths, 1 in Boston, 1 in Cam-
1 in Bridgewater, 1 in Camp Devens, 1 in Dedham and 1 in Mansfield; with 1 death in Melrose; 6 cases
3 deaths, 1 in Boston, 1 in Northampton, and 1 in Worcester; 1 case of smallpox in Tisbury; 3 cases of
incetown, and 1 in Salem; 12 cases of septic sore throat, 2 in Barnstable, 1 in Boston, 2 in Gill, 2 in Hull,
buryport and 1 in Somerville.

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

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Commissioner of Health, Eugene R. Kelley, M.D.

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## Public Health Council.

Eugene R. Kelley, M.D., *Chairman.*

Wm. T. Sedgwick, Ph.D.
George C. Whipple, S.B.
David L. Edsall, M.D.
Joseph E. Lamoureux, M.D.
Wm. J. Gallivan, M.D.
John T. Wheelwright.

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| | |
|---|---|
| Division of Administration, . . . | —— —— |
| Division of Sanitary Engineering, . . | Director and Chief Engineer,<br>X. H. Goodnough, C.E. |
| Division of Communicable Diseases, . . | Director, John S. Hitchcock, M.D. |
| Division of Water and Sewage Laboratories, | Director and Chemist, H. W. Clark. |
| Division of Biologic Laboratories, . . | Director and Pathologist,<br>Milton J. Rosenau, M.D. |
| Division of Food and Drugs, . . . | Director and Analyst,<br>Hermann C. Lythgoe, S.B. |
| Division of Hygiene, . . . . | Director, Merrill E. Champion, M.D. |

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## State District Health Officers.

| | |
|---|---|
| The Southeastern District, . . . | Adam S. MacKnight, M.D., Fall River. |
| The Eastern District, . . . . | Russell B. Sprague, M.D., Boston. |
| The Northeastern District, . . . | Lyman A. Jones, M.D., Swampscott. |
| The North Midland District, . . . | Charles E. Simpson, M.D., Lowell. |
| The South Midland District, . . | William W. Walcott, M.D., Natick.[1]<br>Arthur A. Brown, M.D., Worcester. |
| The Wachusett District, . . . . | Francis A. Finnegan, M.D., Fitchburg. |
| The Connecticut Valley District, . . | George T. O'Donnell, M.D., Springfield. |
| The Berkshire District, . . . . | Howard A. Streeter, M.D., Pittsfield. |

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[1] Leave of absence, military service.

# THE COMMONHEALTH

Vol. 5. Nos. 9 and 10 Sept.-Oct., 1918

## CHILD CONSERVATION NUMBER

## MONTHLY BULLETIN

MASSACHUSETTS
STATE DEPARTMENT OF HEALTH

EUGENE R. KELLEY, M.D., Commissioner

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# REPORT OF THE FIRST YEAR'S WORK OF THE COMMITTEE ON CHILD CONSERVATION OF THE MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

## THE OBJECTIVES OF THE COMMITTEE.

By William J. Gallivan, M.D., Member, Massachusetts Child Conservation Committee.

THE old saying that money wins wars has met its Waterloo in the present world conflict.

Everybody now sees clearly the value of man power, and everybody now feels sure that victory will come to the largest army.

Soon after America's entry into this war our government seemed at first to grope about blindly. But in a remarkably short time America has produced a machine which will go down the ages as one of the wonders of the world. This has been due to the wonderful co-operation between the captains of civil pursuits and the government at Washington.

Conservation of food, conservation of coal, conservation of every material which would help support our army "over there" was adopted by a loyal people at the simple suggestion of the men at the helm.

Everybody in America was doing his "bit." Captains of finance, captains of industry, captains of labor and captains of every successful pursuit placed themselves at the disposal of the government, so that America's preparations have gone through with a "punch."

And so it seemed to the captains of medicine that conservation of child life had an important place in America's war program. For years, like one in the wilderness, they had been crying out to a busy people that many deaths were preventable; that this was particularly true in regard to deaths of infants. For years they had called attention to the fact that even when illness does not result in death it leaves a mark which cuts down many a man in the prime of life, and the only way to meet this problem was by continuous, competent medical care.

Never was there a more favorable time to drive home these truths than in this time of the world's crisis. Physical examination of the youth of the land had revealed a great number of defects, and the rejected candidate for military service returned to his home humiliated because he was pronounced unfit to do a man's work.

Such was the state of the public mind when Massachusetts began the work of child conservation as a war measure, one year ago. In a message to His Excellency Governor McCall, announcing the appointment of a Committee on Child Conservation, the State Commissioner of Health, Dr. Allan J. McLaughlin, referred to conservation of child life as the most important type of conservation in this time of national stress.

The Committee on Child Conservation planned to make a survey of every city and town, of every village and hamlet in the State. This survey would include an exhaustive study of the mortality and morbidity statistics of children under the age of five years. Having thus disclosed indisputably the conditions, they planned a series of public meetings where they proposed to name the remedy.

The most important factors in child conservation are prenatal care, obstetrical care and infant feeding. The committee felt that this survey would disclose the fact that deaths in early life are due to the failure of people to secure proper care in these fields of medical work. It was assumed that the well-to-do would always be in a position to secure competent, continuous medical care. So provision must be made for the rest of society to conserve life and thus increase our man power.

For many years there have been many excellent agencies engaged in baby welfare work, but these agencies have for the most part been located in the larger cities and towns. It was planned to stimulate the establishment of similar agencies in localities where little or no work was being done, so that in every square foot of Massachusetts every expectant mother would be guarded from the beginning of her pregnancy till the birth of her baby, the baby would be supervised during the early period of life, and as this baby advanced from infancy to childhood opportunities for continuous competent medical care would be provided throughout the State. This program meant the creation of prenatal clinics where expectant mothers could be supervised; free hospital beds where pregnant women could have competent obstetrical care; milk stations where mothers could be assisted in the problem of infant feeding; and well-baby clinics where the growing child could be supervised and trained into a sturdy youth.

Such a program, it was felt, would prevent many disasters, and would solve the problem of conserving child life.

The committee realized that there were two very important factors in the carrying out of this program, — the expense of maintaining these clinics, and the education of the people who were in most need of them. So they planned to confer with each city and town as soon as its survey was received, to place before them the result of its investigation in their own locality, and to advise and suggest the means required to improve health conditions. Every expert piece of information would be placed at their disposal in regard to the financing and organization of such clinics as the survey showed were required to meet the needs of that particular locality.

This survey has been completed for 92 per cent. of the population of the State; a detailed report is given by the secretary.

## REPORT OF THE SECRETARY.

By Richard M. Smith, M.D., Secretary, Massachusetts Child Conservation Committee.

On May 26, 1917, Dr. Allan J. McLaughlin,[1] the Commissioner of Health, appointed from the State Department of Health a Committee on Child Conservation, consisting of Dr. David L. Edsall, Dr. William J. Gallivan and Dr. Lyman A. Jones.[2] He appointed also at the same time an advisory committee composed of the following members: Miss Mary Beard, Dr. Robert L. DeNormandie,[3] Dr. Walter E. Fernald, Dr. William Healy, Mrs. W. H. Lothrop, Miss Gertrude W. Peabody, Dr. Richard M. Smith and Dr. Fritz B. Talbot. The committee met at once and organized as a single committee, with Dr. David L. Edsall as chairman and Dr. Richard M. Smith as secretary. Regular meetings were held beginning early in August, 1917. The distinction between the committee itself and its advisory members was never severely drawn, and the actions of the joint body have been final.

The composition of this committee is significant as representing the various factors of child conservation and the different methods by which any program could be put into operation. There are two pediatricians, one obstetrician, one public health nurse, two physicians especially interested in problems of delinquency and feeble-mindedness, the Director of the Civilian Relief of the New England Division of the Red Cross, and a member of the Women's Department of the Council of National Defense.

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[1] Dr. Eugene R. Kelley succeeded Dr. McLaughlin as Commissioner April 1, 1918.

[2] Dr. Merrill E. Champion succeeded Dr. Jones June 1, 1918.

[3] Dr. John B. Swift substituted for Dr. DeNormandie April 9 to August 5, 1918.

The committee immediately outlined its plan for the year, which has been described in the statement of Dr. Gallivan.

A public health nurse was appointed for each health district in the State, and an additional nurse for Boston. These nurses were selected with the greatest care, and all of them had had not only public health training but a considerable amount of experience in actual public health field work for children. Whatever success has been attained has been due in no small measure to the efficiency of these nurses. They have brought to the committee great enthusiasm and devotion, as well as intelligent and constructive suggestions.

In making the surveys the nurses have visited the representatives of the boards of health, the child welfare agencies, the visiting nursing associations and other private or church organizations which were doing child welfare work. They have received also information by personal investigation concerning the actual work being done by these organizations. From these facts the nurses have made to the committee certain suggestions for development of the work which seemed to them desirable in that particular community. The survey made by the nurse, together with the recommendations, has been sent also to the District Health Officer, who has made whatever comments he saw fit and then forwarded it to the Commissioner of Health. A copy of the District Health Officer's letter has been sent also to the committee. At the meeting of the committee at which the nurse who has made the survey has been present, and frequently also the Health Officer of the District, the survey of the town, with the recommendations or whatever personal report the nurse or the Health Officer might give, has been considered, and a specific program for that particular city or town has been outlined. A letter written by the committee has been sent to the community, stating the program and urging its adoption. The Commissioner of Health at the same time has written a letter to the local board of health in that town or city, urging its co-operation in putting the plan into operation.

The recommendations of the committee and the Commissioner have called sometimes for an extension of the work already being done by the local boards of health, or the undertaking of new work by this Department. Sometimes they have called for the addition of more nurses by the Visiting Nursing Association, or the reorganization of that body. Sometimes they have called for the providing of free obstetrical beds in hospitals, and sometimes for the extension of prenatal care, or the undertaking of such care where none had been given. The committee has invariably urged the supervision of well children from birth up to five years of age. Not infrequently it has recommended the establishment of prenatal and well-baby clinics. It has sometimes urged that hospitals provide out-patient departments to which sick children could be brought for treatment.

The committee has insisted in every instance on the necessity of special training for nurses who do public health work, and has urged the Department of Health and the Visiting Nursing Associations to make every effort to secure well-trained public health nurses to do this kind of work.

The committee has tried to stimulate local publicity both for the raising of funds to carry on the work and for the awakening of interest in the importance of child conservation. This has been done by letters and by distribution of literature; also many public meetings have been arranged where talks have been given by several members of the committee.

At the beginning of the work the committee planned to include all parts of the child conservation work, *i.e.*, infant care, school hygiene, juvenile delinquency, child labor, day nurseries, etc. It was impossible to cover this entire field adequately, and so it was decided for the first year to consider only the care of the child up to school age. The usual procedure has been departed from in many instances where the other problems were closely linked up with this portion of the work.

An important feature of the work this year has been the organization of local committees under the Women's Department of the Council of National Defense. This phase of the work has been described by Miss Peabody. It is, however, necessary to report that the carrying out of the program outlined by the committee has been left almost entirely in the hands of these local committees, and through them has been made effective.

This method of carrying on child conservation work has demonstrated a workable method of co-operation between public officials, private organizations and individuals, and has proved definitely that everywhere people are easily aroused to the importance of conserving the child life of the nation.

The recording of results accomplished is difficult because a large portion of the return comes in an intangible form. It is certain that never before in Massachusetts has there been such widespread interest in child welfare work. The number of nurses employed, money appropriated and clinics established is given in the statistical table following the report of the supervising nurses.

# REPORT OF CHILD WELFARE SUPERVISORS.

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By Pansy V. Besom, R.N., Chief of Child Welfare Supervisors, Massachusetts Committee on Child Conservation.

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DEEP rooted as is the love of children in the heart of every woman, yet it has taken the great war to make us realize the tremendous waste of infant life which is constantly occurring, and the unnecessary suffering and physical defects which children must so often endure.

It was therefore with earnestness and enthusiasm that one year ago the 8 nurses chosen to do the definite piece of child-saving work, which the State Committee on Child Conservation had carefully planned, took up the task.

The work has been hard and it sometimes appeared to be an up-hill job, but, as one of the supervisors stated in her report, "there is a feeling of infinite satisfaction in having participated in this pioneer child saving campaign in Massachusetts." And there is a still greater satisfaction in seeing the results, which have so far exceeded our expectations.

Positions have been created for 46 nurses as a result of the movement, while 30 child welfare stations and 8 prenatal clinics have come into existence. The amount of money raised by private organizations and municipalities is $53,930, with $11,500 fairly sure to be appropriated within the next few months. This sum does not include expenditure for the support of child welfare stations and sick and well baby clinics, nor can the additional work which many of the existing agencies have assumed without increasing their forces be reckoned in dollars and cents. Furthermore, the success of the campaign cannot be estimated alone by the amount of money raised and the number of nurses placed. The conferences with the local committees, boards of health, social agencies, etc., the talks given before women's clubs, mothers' clubs, Red Cross societies, district nursing associations, and the like, all tended to educate the public and to stimulate a general interest in child welfare, the results of which cannot be measured.

The public health nurses throughout the State have shown a splendid spirit of co-operation, and have been at all times ready to accept any new program which the supervisors laid before them, and eager to assume any new duties which the study of conditions showed to be necessary for the saving of child life.

The local boards of health have been most courteous and helpful. The child welfare committees of the Women's Council of National Defense have co-operated and paved the way for the supervisors in almost every community. The value of these committees cannot be described here, but much of the success of the year's work has been due to their efforts.

It is the unusual community which needs more than to have proved to it that it is really failing to care for its children. Most cities believe they are doing all that can be done or all that can be financed. A striking example of such a belief has been shown by one of the supervisors in her report. She says: —

> For ten years in one of the cities with a population of about 125,000, special consideration had been given the problem of child life. As a result of this intensive work the infant mortality rate had steadily decreased, and the rate recorded against 1916 was 167. The figures for 1917 showed an infant mortality rate of 179, or a rise of 12 points at the end of eight months of war. Could there be any more spectacular effect of war upon the child life of the city! The usual number of agencies was at work doing the usual kind and amount of work. The unusual factor was the war. The men had been drawn by the draft, and for two reasons many of the women had returned to the looms. One group had done so because the support of the family had fallen on them, and the other group had gone from choice because wages were unusually high, and they liked to get back "where there was something doing." Then there was the mother of nine children who went back to get rested, leaving her brood in a day nursery.
>
> The first local reaction to the State's request to meet this tragic situation brought forth the assertion that there was no money in sight to extend the work. Later on a full realization of the destructive effect of the war upon the children of the city was considered. As a result, the local committee started a campaign to raise money, and, notwithstanding the many demands for funds previously made upon the public, $6,000 has already been banked, three additional nurses have been floated to specialize with the child, and the committee is still at work.

Other cities have responded in like manner. In one instance the city council voted to assume all responsibility for child welfare work, and the board of health was authorized to spend a sum sufficient to cover the expenses of a supervising nurse and three assistants.

Three large towns some distance out on Cape Cod have, as a result of the State's program, united their efforts to form a rural visiting nursing association. Each village in each township is to have a small local committee, the chairman of which committee is to be a member of a central board of directors, which will also embody in its composition other representative people of the towns. The plan calls for a budget of $6,000 for the first year. Intensive work with the child will begin in the prenatal stage, and be continued during school life. The plan also includes a health center with a small surgical clinic, and the development of any other health work that the territory may need. The money to support this work is being raised from private funds.

These are only a few examples of the way in which communities have responded to the State's appeal.

It is conceded that the public health nurse is the greatest force for education along prenatal and child welfare lines, and the year's work has proved that society need only be shown her value to create a place for her.

A year's work is finished, but it is only the end of the beginning. We have demonstrated what an intensive campaign can do, and each supervisor, in concluding her final report, expresses the opinion that this work should continue.

Following are the child welfare supervisors engaged in the work covered by this report: —

Ellen M. Atchison, R.N.
Pansy V. Besom, R.N., Chief.
Harriott P. Churchill, R.N.
Minetta E. Moore, R.N.
Elizabeth Robison, R.N.
Elsie F. Smith, R.N.
Anne Sutherland, R.N.
Blanche Wildes, R.N.

Lenah Austin Smith, R.N., director of Baby Hygiene Association for 1917, made the survey of Boston, and Miss Katherine McMahon, R.N., made the survey of Chelsea.

*Summary of Year's Work.*

| | |
|---|---|
| Number of committee meetings held, | 65 |
| Number of supervisors' meetings held, | 11 |
| Number of talks given by members of committee, | 62 |
| Number of talks given by supervisors, | 258 |
| Estimated number of persons reached, | 18,406 |
| Amount of money appropriated by cities and towns, | $25,680 |
| Amount of money raised by private organizations, | 28,250 |
| Total, | $53,930 |
| Amount of money fairly sure in prospect, | 11,500 |
| Total, | $65,430 |

No accurate figures available for money raised for support of clinics.

No accurate figures available for money raised for weighing and measuring children.

| | | |
|---|---|---|
| Number of nurses actually employed, | 31 | |
| Number of nurses authorized but not secured, | 15 | |
| | | 46 |
| Number of nurses fairly sure to be placed, | | 5 |
| Total, | | 51 |

| | |
|---|---|
| Dietitians employed for child welfare work, | 2 |
| Liberty Milk Shop opened (Boston), | 1 |
| Children's Cottage (Boston Common), | 1 |

| | |
|---|---|
| Number of child welfare stations opened by municipalities, | 6 |
| Number of child welfare stations opened by private organizations, | 24 |
| Total, | 30 |

| | |
|---|---|
| Sick-baby clinics opened by hospitals, | 1 |
| Sick-baby clinics opened by municipalities, | 1 |
| Total, | 2 |

| | |
|---|---|
| Number of prenatal clinics opened by hospitals, | 3 |
| Number of prenatal clinics opened by private organizations, | 3 |
| Number of prenatal clinics opened by municipalities, | 2 |
| Total, | 8 |

| | |
|---|---|
| Population of Massachusetts, 1917, | 3,849,006 |
| Cities and towns in Massachusetts, | 354 |

| | Number. | Per Cent. of Total. | Population. | Per Cent. of Total. |
|---|---|---|---|---|
| Communities surveyed, | 220 | 62 | 3,564,024 | 92 |
| Communities visited but not surveyed, | 22 | 6 | 69,547 | 2 |
| Communities not visited nor surveyed, | 112 | 32 | 215,435 | 6 |
| Totals, | 354 | 100 | 3,849,006 | 100 |

# REPORT OF THE CHILD WELFARE DEPARTMENT OF THE WOMAN'S COMMITTEE OF THE MASSACHUSETTS COUNCIL OF NATIONAL DEFENSE.

By Gertrude W. Peabody, Vice-Chairman, Child Welfare Department.

THE Department of Child Welfare was organized in the summer of 1917 to co-operate with the Child Conservation Committee of the State Department of Health in carrying out its program for the reduction of infant mortality and the prevention of physical defects in children of preschool age. The State committee believed that it would secure more effective and permanent results if it worked with two groups of persons, — first, with the official health officers, and second, with committees of private citizens. A child welfare committee, under the local unit of the Council of National Defense, was therefore formed in every town to work with the child welfare supervisors, and to carry out in co-operation with the local boards of health the recommendations of the State committee. The methods used and the results accomplished by this plan have been described in the preceding reports.

In February, 1918, the Child Welfare Department of the Federal Council of National Defense and the Federal Children's Bureau issued a program for children's year, designed to be carried out by the State Child Welfare Departments. The first part of this comprehensive plan for child conservation dealt with problems of infant mortality and child hygiene, and the program presented was almost identical with that already being carried out in Massachusetts. The national plan, however, urged that, as a basis for permanent child welfare work, a physical census of all children under five years old be taken by a national weighing and measuring test. The country would then know the physical condition of its young children, and would take the necessary measures to improve it. The next generation would then be able to pass a better physical examination than the young men of to-day were able to do when examined for the draft. The test was approved by the State committee, and was carried out by the local child welfare committees with the active and enthusiastic assistance of the child welfare supervisors. Record cards and printed instructions were supplied by the Children's Bureau, and each committee was instructed that the value of the test lay in the thoroughness with which plans for permanent follow-up work were carried out.

The second part of the children's year program emphasized the need of recreational opportunities for the physical and moral development of children. Circulars describing possible summer activities for playgrounds were issued in July, and were distributed to the local child welfare committees. The Playground and Recreation Association of America sent one of its field secretaries to promote recreational work in Massachusetts, in co-operation with the Child Welfare Department of the Council of National Defense. The opportunity thus given of offering to every community the services of an expert in organizing permanent municipally supported recreational systems is greatly appreciated. One city has already had the advantage of this leadership and interesting results are anticipated. Other cities are awaiting their turn. Massachusetts must benefit from the experience of England, and learn that it is more important to maintain recreational facilities in war time than in peace, when the children are in normal home surroundings.

The Child Welfare Department has co-operated with the State Departments of Education and Health in urging that short courses on child welfare be introduced into vocational schools, and that in places where such schools do not already exist they be established. Letters were sent simultaneously from these three Departments to their local representatives, asking them to co-operate in this effort. An outline for a course of twelve lessons on child welfare, with suggestions for exhibits and demonstrations, has been prepared by the Child Welfare Department, in co-operation with the State Department of Health and the State Committee on Child Conservation. Considerable interest has been shown, and requests for the outline are being received. It is too soon to be able to report definite results.

Other phases of child conservation, to be carried out as outlined in the children's year program, will be presented in detail from Washington during the winter.

Report of the weighing and measuring test in Massachusetts up to September 1 follows. Reports from some towns have not yet been received.

| Town. | Estimated Population, 1918. | Number of Children tested. | Approximate Proportion of All under Five Years (Per Cent.). | Number below Average. | Plans for Follow-up Work. |
|---|---|---|---|---|---|
| Adams, | 13,340 | 1,307 | 95 | 160 | Under-average cases listed with board of health. Follow-up work done by school nurse and insurance nurse. |
| Amherst, | 5,844 | 331 | 74 | 107 | Nurse will visit children in homes and do what is necessary. |
| Andover, | 8,412 | 390 | 80 | 12 | Referred to district nurse. Hope to have prenatal and baby clinics. |
| Arlington, | 17,264 | –[1] | – | – | – – |
| Ashburnham, | 2,027 | –[2] | – | – | – – |
| Ashby, | 945 | 23 | 50 | 1 | Will watch under-average one. |
| Ashland, | 2,213 | 138 | 75 | 6 | Distribute booklet on care of child. |
| Attleboro, | 19,933 | 850 | – | – | District nurse visiting about 35 regularly. Hope to arrange with hospital for needy cases. Expect to start baby clinic. |
| Auburn, | 3,833 | –[1] | – | – | – – |
| Ayer, | 2,767 | 138 | 70 | 34 | Public health nurse holding mothers' conferences. Baby clinic being organized. |
| Barnstable, | 5,200 | –[2] | – | – | – – |
| Barre, | 3,809 | 345 | 100 | 132 | Hope to secure public health nurse. |
| Belmont, | 9,711 | 841 | 95 | 35 | Organizing public health nursing association. |
| Beverly, | 25,725 | 1,792 | 90 | 447 | Not formulated. |
| Billerica, | 3,538 | 131 | 33⅓ | 18 | To get active co-operation of board of health and selectmen. |
| Boston, | 793,471 | 35,712 | 50 | 14,570 | Referred to special committee. |
| Braintree, | 10,162 | 389 | 39 | 110 | Names of those needing care given to visiting nurse. |
| Brimfield, | 978 | 48 | 100 | 10 | Not any. |
| Brockton, | 65,746 | –[1] | – | – | – – |
| Brookfield, | 1,966 | 162 | 100 | 12 | Have organized and await suggestions. |
| West Brookfield, | 1,263 | 95 | 78 | 15 | Hope district nurse will follow up. |
| Brookline, | 37,147 | 1,258 | 100 | –[3] | Carrying out suggestions from Children's Bureau. |
| Cambridge, | 111,379 | –[1] | – | – | – – |
| Canton, | 6,153 | 361 | 50 | 108 | Children needing care visited by district nurse. |
| Chelsea, | 504,687 | 3,147 | 70 | 1,269 | One child welfare nurse, 2 stations, 1 conference a week in each. Doctor in attendance. |
| Chicopee, | 33,177 | –[1] | – | – | – – |
| Clinton, | 13,266 | 940 | – | – | Plan to have committee visit homes; advise parents; keep in touch with nurses and doctors; keep record of each child. |
| Cohasset, | 2,938 | 138 | 50 | 6 | Referred to district nurse. |
| Cummington, | 676 | 50 | 100 | – | – – |
| Dalton, | 4,044 | 341 | 84 | 196 | To be done by visiting nurse secured by child welfare committee. |
| Danvers, | 12,309 | 591 | 73 | 84 | To be done by 2 public health nurses in town. |
| Dedham, | 12,172 | 645 | – | 305 | Plans not formulated. |
| Deerfield, | 3,079 | 119 | 100 | 15 | – – |
| South Deerfield, |  | 234 | 100 | 47 | Special meeting for mothers of children below average. |
| Dennis, | 1,761 | –[2] | – | – | – – |
| Duxbury, | 2,071 | 130 | 90 | 12 | Will visit from time to time the few who need care. Hope to have district nurse. |
| Easthampton, | 10,692 | –[1] | – | – | – – |
| Everett, | 40,435 | –[1] | – | – | – – |

[1] Test made, report not received.

[2] Test not completed.

[3] Weight, 448; height, 220.

| Town. | Estimated Population, 1918. | Number of Children tested. | Approximate Proportion of All under Five Years (Per Cent.). | Number below Average. | Plans for Follow-up Work. |
|---|---|---|---|---|---|
| Fitchburg, | 40,830 | –[1] | – | – | – – |
| Franklin, | 6,953 | 565 | 99 | 100 | Plan supervision of diet and hygiene for some; medical nursing care in homes for others. |
| Gardner, | 17,451 | –[1] | – | – | – – |
| Gloucester, | 24,529 | 1,825 | 87 | – | Doctors will follow up certain cases. Hope to start welfare clinic in fall. |
| Grafton, | 6,579 | 475 | 100 | 331 | District nurse to follow up babies under weight. |
| Groton, | 2,448 | 76 | 50 | 23 | Pamphlets distributed. |
| Great Barrington, | 7,076 | –[2] | – | – | – – |
| Greenfield, | 14,028 | 1,280 | – | 279 | A child welfare nurse began work July 1. |
| Greenwich, | 410 | 9 | – | 3 | – – |
| Hadley, | 3,093 | 205 | 95 | 21 | – – |
| Hamilton, | 1,962 | 240 | 66 | 41 | Nurse to follow up babies under weight; talks to mothers; demonstrations of proper food, care of children, etc. |
| Wenham, | 11,060 | | | | |
| Hatfield, | 3,044 | –[1] | – | – | – – |
| Haverhill, | 52,873 | 2,609 | 98 | 795 | Record cards given to board of health for consideration. |
| Hingham, | 5,456 | 176 | 40 | – | Plan weekly baby clinic with doctor. |
| Hinsdale, | 1,347 | 59 | 80 | 15 | Some have had tonsils and adenoids removed; changes in diet have been arranged; 1 boy to see a specialist. |
| Holden, | 2,749 | 145 | – | 23 | District nurse will follow up abnormal cases. |
| Holyoke, | 62,796 | –[1] | – | – | – – |
| Hubbardston, | 1,091 | 62 | 95 | 19 | Follow-up work being done when needed. |
| Hudson, | 6,768 | 436 | – | – | Thirty-five need slight surgical operations; nurse doing follow-up work. |
| Kingston, | 2,667 | 18 | – | – | – – |
| Lancaster, | 2,662 | 77 | 33 | 24 | Referred to district nurse. |
| Leicester, | 3,377 | 236 | –[3] | –[3] | District nurse to look after cases reported to her. |
| Lenox, | 3,358 | 267 | 89 | 40 | Visiting nurse to follow up cases below average and instruct and advise. |
| Leominster, | 17,688 | 800 | – | – | Four permanent clinics established; follow-up work done by tuberculosis nurse and assistants. |
| Leverett, | 811 | 50 | 66 | 23 | – – |
| Lexington, | 5,936 | –[1] | – | – | – – |
| Longmeadow, | 1,846 | 166 | 83 | 54 | – – |
| Lowell, | 109,059 | 5,668 | 50 | 488 | Welfare nurse to visit those needing care; plan to have second weighing of those below average. |
| Lunenburg, | 1,748 | 113 | 90 | 45 | Hope to have a visiting nurse. |
| Lynn, | 99,952 | 6,952 | 66 | 1,000 | Letters of advice sent to parents of children below average. Public health nurses to follow up cases as far as possible. |
| Malden, | 51,798 | 1,860 | 50 | 996 | Want to secure 1 or more public health nurses, and to open stations for watching progress of children. To promote prenatal care. |
| Manchester, | 3,119 | 153 | 100 | 55 | Visiting nurse in close touch with babies below par. Dental work for children being started. |

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[1] Test made, report not received.

[2] Test not completed.

[3] Small per cent.

| Town. | Estimated Population, 1918. | Number of Children tested. | Approximate Proportion of All under Five Years (Per Cent.). | Number below Average. | Plans for Follow-up Work. |
|---|---|---|---|---|---|
| Mansfield, . . . | 6,150 | 410 | – | – | – – |
| Marblehead, . . . | 7,779 | 300 | 100 | 104 | Babies below average being followed up in their homes; others under physicians' care. |
| Medfield, . . . | 3,764 | 105 | 100 | 15 | Will visit mothers when possible and weigh children at intervals; some already under care of doctor. |
| Medford, . . . | 35,230 | –[1] | – | – | – – |
| Medway, . . . | 2,942 | 129 | – | 4 | – – |
| Mendon, . . . | 968 | 72 | 92 | 53 | – – |
| Millis, . . . . | 1,470 | 76 | – | – | – – |
| Milton, . . . . | 9,033 | 325 | 94 | 133 | Distribution of pamphlets through Public Library. District nurse to visit those below par. Measure again in fall. |
| Monson, . . . . | 5,161 | 265 | 100 | 13 | Nurse in office during summer for consultation. Each child visited once a year until of school age; those needing more oversight, oftener. |
| Montague, . . . | 8,605 | 170 | 100 | –[2] | – – |
| Turners Falls, . . |  | 576 | 100 | 125 | Advised to consult physician. |
| Newton, . . . | 45,234 | 2,613 | 50 | 210 | Children below par to visit welfare clinics regularly; nurses to make visits when needed. |
| North Adams, . . | 22,045 | 1,620 | 66 | 532 | Children below normal to be weighed and measured every six months; all children every year. Wants nurse. |
| Northampton, . . | 23,081 | 640 | 66 | 132 | Plan not yet formulated; will include instruction in diet for foreign mothers. |
| Northborough, . . | 1,851 | 74 | 70 | 23 | – – |
| Northbridge, . . . | 9,540 | 731 | 75 | 365 | Public health nurse and assistant follow up cases. |
| Northfield, . . . | 1,872 | 89 | – | –[3] | – – |
| Norwood, . . . | 12,879 | 570 | 33 | – | Referred to health center and district nurses. |
| Orleans, . . . . | 1,224 | 57 | 90 | 19 | No definite plans; mothers advised in several instances. |
| Palmer (Depot Village), | 10,019 | 213 | 66 | 61 | Referred to visiting nurse of Palmer. |
| Paxton, . . . . | 506 | 56 | – | – | – – |
| Peabody, . . . | 20,489 | –[1] | – | – | – – |
| Pepperell, . . . | 2,912 | 81 | 65 | 10 | District Nurse Association has charge of follow-up work and will continue to supervise it. |
| Phillipston, . . . | 367 | 24 | – | – | – – |
| Pittsfield, . . . | 44,410 | 2,056 | – | 750 | Referred to visiting nurse. |
| Plainfield, . . . | 356 | 24 | 100 | – | Ready for suggestions. |
| Plymouth, . . . | 13,430 | 257 | 15 | 128 | Weighing and measuring test each month. |
| Quincy, . . . . | 45,827 | 2,641 | – | 388 | Nurse appointed by board of health for follow-up work, to have well-baby clinic. |
| Rowe, . . . . | 404 | 23 | 100 | 2 | Wants suggestions. |
| Rowley, . . . . | 1,554 | 38 | 35 | 14 | District nurse will do what she can among children. |
| Salem, . . . . | 41,082 | 3,263 | 66 | – | Co-operation between existing committees; further plans under consideration. |
| Sandwich, . . . | 1,378 | 93 | 100 | 18 | Wants district nurse. |
| Scituate, . . . | 2,777 | 83 | 40 | 5 | Wants district nurse. |
| Shelburne Falls (Shelburne). | 1,474 | 59 | 100 | 5 | Will make later tests to see if children are keeping well. Visiting nurse will visit occasionally. |

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[1] Test made, report not received.

[2] Three greatly below; several slightly below.

[3] Very few.

| Town. | Estimated Population, 1918. | Number of Children tested. | Approximate Proportion of All under Five Years (Per Cent.). | Number below Average. | Plans for Follow-up Work. |
|---|---|---|---|---|---|
| Sherborn, | 1,869 | –[1] | – | – | – – |
| Shrewsbury, | 3,339 | 177 | 60 | 73 | Only 2 children needed special care. |
| Shutesbury, | 308 | 19 | – | 2 | – – |
| Southbridge, | 15,255 | 1,000 | 66 | – | – – |
| South Hadley, | 5,362 | 429 | 100 | 83 | None at present. |
| Springfield, | 111,983 | 6,000 | 100 | 482 | To follow up through medical clinics. |
| Swampscott, | 8,077 | 352 | 60 | 127 | To be followed up by physicians and nurse. |
| Taunton, | 37,381 | –[2] | – | – | – – |
| Tyngsborough,[3] | 1,056 | 79[3] | 75 | 39 | Nothing definite; wish suggestions. |
| Walpole, | 5,875 | 304 | 60 | 89 | No definite plans. Public health nurse in town. |
| Waltham, | 31,643 | 697 | 25 | 205 | Nurse to follow up. |
| Warren (West), | 4,319 | 388 | – | –[4] | Wants suggestions. |
| Watertown, | 18,851 | 954 | 33 | 455 | Child welfare nurse to hold conferences once a week in 2 stations and follow up cases. |
| Wellesley, | 7,097 | 302 | 75 | 78 | Repeat weighing and measuring; give diet cards and visit children below average, in homes. |
| West Springfield, | 12,696 | 160 | – | 69 | Baby clinic with physician and nurse. |
| Westborough, | 6,233 | 254 | 85 | 9 | Appeal to District Nurse Association, board of health and school board. |
| Westfield, | 19,929 | 245 | 12 | 40 | Day nursery will care for those whose mothers are working. Active Visiting Nurse Association and 2 nurses to follow up. |
| Westhampton, | 434 | 28 | 100 | 3 | Nurses to address meeting. |
| Weymouth, | 14,659 | 552 | 96 | 110 | Special attention to those exposed to tuberculosis. Advice given to mothers; instruction in hygiene and feeding. |
| Williamsburg, | 2,109 | 73 | 33 | 37 | Only 2 need special care. |
| Williamstown, | 4,157 | –[2] | – | – | – – |
| Wilmington, | 2,632 | 116 | 60 | 20 | Ten cases turned over to doctor; 2 sent to hospital; 1 X-ray examination. Committee to test at home all not brought to clinic. Polish to have Polish nurse. |
| Winchendon, | 6,056 | 391 | 95 | 122 | Nurse to give instruction in hygiene and food formulæ. |
| Winchester, | 10,451 | 464 | 50 | 48 | Followed up by visiting nurse; mothers instructed. |
| Winthrop, | 14,443 | 584 | 50 | 174 | Baby clinic; parental care in the home. |
| Worcester, | 173,419 | 12,609 | 55 | 1,664 | Children needing attention visited in homes and referred to local child welfare agencies. |
| Yarmouth, | 1,412 | –[1] | – | – | – – |

Of the 354 cities and towns in the State, 129 have carried out the test.

[1] Test not completed.

[2] Test made, report not received.

[3] Including 9 North Chelmsford children.

[4] Very few.

# THE PART GOOD OBSTETRICS PLAYS IN CHILD WELFARE.

By Robert L. DeNormandie, M.D., Assistant in Obstetrics, Harvard Medical School.

TO a thoughtful observer it must be evident that good obstetrics is the very beginning of all child welfare work, for with poor obstetrics the mortality and the morbidity rate of the mothers at once rise. With these rates rising the early infant mortality also rises. Unless the mother is carried through her pregnancy successfully, unless she is able to take care of her infant properly, no amount of child welfare work can bring the infant mortality rate to its low point.

Good obstetrics in relation to child welfare naturally divides itself into four fundamental parts, namely: the prenatal care the woman receives, the care the woman receives at the delivery, the post-partum care, and finally the care of the child during and immediately after the birth.

Much has already been accomplished in certain sections of this State in the past few years by the intelligent supervision of the pregnant woman, but even now by far the majority of women have no — literally no — medical care during their pregnancy. It is not an exaggerated statement to say that a very large majority of our women see a physician perhaps once during their pregnancy, unless it should have happened that some friend had recently had an unfortunate experience in her pregnancy; and then the women of the neighborhood who were then pregnant sought medical care. But this sudden demand lasts but a few weeks, and the community falls back at once to its accustomed routine.

The blame for this state of affairs lies not only with the physicians but with the patients themselves. The patients do not know the need of supervision; the physicians are not interested in the broader questions of preventive medicine, — of the entire public health. In order to obtain a higher standard throughout the State we must have a campaign of education as to what each pregnant patient has a right to demand of the physicians in the community in which she lives; and the physicians, from their standpoint, must hold the patients to this standard; and the standard, as we shall see, is a perfectly possible one for any community to reach, provided the stimulus for this standard is present.

What is prenatal care? Is it some mysterious oversight that a few physicians give their patients? Not at all. In a few words it is simply intelligent medical oversight that all physicians can give if they have the co-operation of their patient. Pregnancy produces many changes in the woman's organism, and in order that these changes, which usually are physiological, shall not become pathological a close watch of the organism must be kept.

Another way of putting this is that the woman is in training for her labor just as an athlete is in training for his final race. He is under medical supervision; of that there is no question. Should there be, then, any question of supervision of the pregnant woman? This supervision must begin as soon as the patient suspects that she has become pregnant, and continue until the pregnancy is over and she is up and about again at her usual work, and the baby well started on its life.

A patient should be seen at once in order that she may be assured that her physical condition is normal, and that she may be told what the hygiene of pregnancy means. This must not be in high-sounding medical terms, but in a simple, straightforward talk, in which the importance of the early reporting of any untoward signs and symptoms is made very clear to her.

A physical examination must be made unless her condition is accurately known just previous to the inception of pregnancy. The condition of the heart, kidneys and pelvis is essential. The neglect of knowing the condition of these leads to the loss of many future citizens. If a damaged heart, inefficient kidneys or a retroverted uterus is discovered early, much can be done to safeguard the pregnancy so that it can go through to a successful issue without undue risk to the mother. If there is the slightest suggestion that syphilis is present then a Wassermann reaction must be done, and if positive, active anti-syphilitic treatment must be instituted at once, with a good hope that the baby will be born in good condition. Gonorrhœa, if present, must be well and continuously treated. Under no circumstances should a prophylactic at the birth fail to be instilled in the baby's eyes. As the result of this physical examination a standard for this individual patient is obtained from which, as pregnancy advances, comparisons can be made.

There is no need here for stating the various essential points in the hygiene of pregnancy. They are all well known, and if the physician has the well-being of his patient at heart he will not fail to go over every one of them with her. There are, however, two points in the early months of pregnancy which are not infrequently overlooked as common causes of early miscarriages, namely, excessive work, at times the slightest work, on the days corresponding to the menstrual flow were the patient not pregnant, and secondly, intercourse at these same periods. The uterus at these times is not uncommonly much more irritable, and any added irritation frequently causes a miscarriage.

At this first visit, or soon after, the patient should be told when to appear again. Each physician allows a certain latitude to these subsequent visits, but under no circumstances should he be out of touch with the patient for more than two weeks, and during the later half of pregnancy he should know of her condition each week. This can readily be accomplished by having the patient send to the office a specimen of the twenty-four hour amount of urine on the alternating weeks from her visits to the office. If the urine shows anything abnormal, or the patient's blood pressure rises, or other untoward symptoms appear, closer touch must be kept with the patient.

It is only by this careful oversight of the patient that we can hope to reduce the infant mortality from the preventable complications of pregnancy, for by this means the toxemias of pregnancy can be discovered early, successfully treated and eclampsia prevented. If all pregnant patients had competent, intelligent supervision eclampsia would practically be wiped out as one of the most terrible obstetrical complications. The toxemias that come with pregnancy we cannot always forestall; but with careful oversight, with intelligent cooperation between doctor and patient, nearly all eclampsia can be stopped. When this fact is known, when the laity realizes that eclampsia, in by far the majority of cases, is an unnecessary complication, physicians will insist upon following their patients better; will insist that patients come to the office when they are asked to, and if they do not come when they are requested will refuse to look after them. Then and then only will patients appreciate the fact that physicians mean to have competent supervision of all patients the entire time.

Careful supervision will to some extent do away with premature deliveries, for it can stop the patient many times from over-working up to the very last, thereby overtaxing her strength and giving an opportunity for a premature labor. In not a few cases in the poorer class of patients, where a physician has close general oversight of the patient, the use of alcohol can be reduced to a minimum, thereby increasing the chances for the child's well-being.

Now in the second division — the care that the physician gives his patient at the time of delivery — the two chief complications to prevent are the occurrence of sepsis and the occurrence of severe lacerations. Both of these have an indirect result on child welfare, for if either one occurs the ability of the mother to give the child proper care during the first few weeks of life is lessened, and therefore without the mother's care and nursing the infant mortality at once rises.

Again, careful obstetrics will in by far the majority of cases prevent post-partum hemorrhage. In many cases when a severe post-partum hemorrhage has occurred patients make such a poor convalescence that they are unable to nurse their babies well, and it becomes necessary to put them on to bottle feedings at once. In not a few cases does this again raise the infant mortality.

Good obstetrical care cannot prevent the accidents of labor, — by that we mean the unavoidable complications that sometimes occur, — but it will meet the emergency satisfactorily, and thereby give the child a greater opportunity to live than under more adverse circumstances.

In the third division — the post-partum care that is given a patient — much depends upon how the patient gets up from her confinement whether she will be able to continue nursing her baby. The method by which she is taught to look after her breasts will do much to obviate breast abscesses and other complications of the breasts, and will allow the continuation of nursing for some months, when oftentimes with poor care the nipples and breasts get into such bad condition that nursing is absolutely impossible.

The final division in which good obstetrics is concerned is the condition in which the child is born. Good, careful obstetrics means the safeguarding of the child in every possible way from the injuries at the time of labor. The condition of the child is best shown by careful following of the fetal heart during labor. This following of the fetal heart during labor is a most neglected point in technic in obstetrics, and one which, if followed carefully and intelligently, will lead to the saving of many infants. As many cerebral hemorrhages in the new born are caused by prolonged compression during slow and difficult labor as are caused by operative deliveries; and if the operative deliveries are well done, more cerebral hemorrhages are caused by such pressure than are caused by the operative delivery. Careful obstetrics prevents fractures and brachial paralysis. A careful obstetrician, with the help of a careful nurse, discovers early signs of hemorrhagic disease of the new born, and the present status of transfusion has brought the mortality from this disease down to almost nothing, when a few years ago it was up very high.

Good obstetrics demands that from the moment of birth careful oversight of the baby must be maintained. This means that the lungs are made to expand in order to prevent atelectasis; that the body heat is kept up and the baby is never allowed to be chilled. This one point, the severe chilling of new-born infants, yearly causes many unexplained deaths, and by many physicians is not sufficiently guarded against. The recent educational work in relation to ophthalmia neonatorum has given most acceptable results, so that now both the profession and the laity realize their responsibility to the child in this condition. An infant cannot be properly supervised unless it is weighed regularly. If it does well nursing, well and good, but if poorly, the question arises of giving a supplemental or alternating bottle of modified milk, and if this is necessary it must be done intelligently according to the best teaching; for in the case of a new-born baby feeding once badly upset is oftentimes with the greatest difficulty straightened out again.

Good obstetrics, as far as we know at the present time, can have absolutely nothing to do with the question of malformations. The only thing we can argue from good obstetrics is that the better the condition the mother is in, the better chance has the baby of coming into the world well nourished and in good condition; but it is not right to say that good obstetrics can have anything to do with the prevention of malformations.

Such, then, in a few words is the part that good obstetrics plays in child welfare. It is, as I said at the very first, the beginning of all child welfare work; for if many of these fundamental teachings are overlooked, miscarriages occur, unnecessary deaths follow, and child welfare has no opportunity to show what its possibilities are.

## INFANT FEEDING.

By Richard M. Smith, M.D., Visiting Physician, Children's Medical Department, Massachusetts General Hospital.

INFANT feeding represents the most important single factor in the care of babies. If the feeding is properly carried out, not only the deaths from diarrhœal diseases are practically eliminated, but the individual baby is able to resist better diseases of all sorts. It is obviously impossible to prescribe in detail the food to be given a particular infant, but certain general directions can be given which are applicable, with modifications, in all cases.

In the first instance every new-born infant should be given breast milk. Only when there is some definite reason to the contrary should any exception be made to this rule. The legitimate reasons for a mother's not nursing her baby are few. First, — because of the baby, — some physical defect of the baby's mouth which prevents sucking, and prematurity or feebleness. In these cases the baby ought to be given pumped breast milk with a medicine dropper or a Breck feeder. Second, — because of the mother, — only serious chronic disease or mental disturbance should prevent the mother from nursing. Breast milk is the natural food for infants; it is clean, fresh and inexpensive. It is important that the mother should want to nurse her baby, for her mental attitude toward nursing is a great factor in success or failure. It is important, also, for her to do everything to keep herself in the best physical and mental condition. Her daily routine should be regulated according to her usual custom so far as her strength will allow, and she should have a full diet, eliminating only those articles which cause her discomfort, or which have been proved to upset the baby. She should eat three meals a day and take a quart of milk or fluid other than water in addition. After nursing has been established it is not necessary to stop it because of the return of menstruation or because of sharp illness of the mother. It never should be discontinued as a matter of convenience to the mother or to the family. The advent of another pregnancy is an indication for weaning.

If the mother cannot provide milk for her baby, the ideal substitute is the milk of another nursing woman. If a wet nurse is provided, great care should be taken to be sure that she is healthy; the physical examination should include a Wassermann test. It is not necessary that the wet nurse's baby be of the same age as the baby to be nursed. It is possible to withdraw the breast milk and give it to the baby in a bottle exactly as cow's milk is given.

If it is impossible, for one reason or another, to secure breast milk, the next best substitute for human milk is fresh, modified cow's milk. Proprietary foods or dry milk powders are not proper foods for long-continued feeding. Cow's milk, to be satisfactory for infant feeding, should be of the best quality. If the milk is of certified grade it may be used raw; otherwise it should be pasteurized. To pasteurize the milk it should be heated to 145 degrees Fahrenheit for thirty minutes. This temperature does not unfavorably influence any of the ingredients, and does not detract in any way from its nutritive value. The milk should be chosen from cows having a not too high fat content, or the fat in too large globules. The milk from Jersey and Guernsey cows is not suitable for infant feeding. It is better to use that from Holstein or Ayrshire cows. If only Guernsey milk is available, a part of the cream should be removed. After the milk has been received in the home it should be kept in the ice chest away from other articles of food. All the utensils used in preparing the baby's food should be sterilized daily.

It is extremely important that the baby be fed regularly. He should not be given any food between feeding times. Most new-born infants, after the feeding is established, that is, at the end of the second or third day, can be put on three-hour feedings during the day (6, 9, 12, 3 and 6) and four-hour feedings during the night (10 and 2). The 2 o'clock feeding can be dropped as soon as the baby will go through the night. The time for discontinuing this feeding depends entirely upon the individual baby, but usually it can be done in the first few months. The three-hour interval during the day should be continued as long as the baby is hungry at feeding time; but when the baby begins to be sleepy at the time of feeding, or is not interested in the food, the interval may be lengthened to every four hours in the day. The hours of feeding would then be as follows: 6, 10, 2, 6 and 10.

When put to the breast at first the baby should not nurse for more than ten minutes. The length of nursing may be increased gradually up to twenty-five minutes, but should never exceed thirty minutes. When fed from the bottle the amount of food to be given at each feeding will depend upon the size of the baby, but a normal baby will take from 1½ ounces to 2 ounces at first; this may be increased quickly up to 3 ounces. The baby should be given enough to satisfy him, but not so much as to cause regurgitation. Roughly speaking, the baby will take 1 ounce more than he is months old. This, however, is only an approximate amount, and in general is too little rather than too much. The baby should not be given more than 8 ounces at a feeding at any time before he is eight months old, and not after that, unless he is very hungry.

If the baby is fed on cow's milk it is necessary to modify it by some form of dilution. Whole cow's milk is not properly adapted for young infants. The modification may be made by using either whole milk or cream and skimmed milk. Many normal babies will do perfectly well from birth on dilutions of whole milk. It is impossible, however, by this means to change the various ingredients of the milk separately, so that it is necessary often to use cream and skimmed milk. If one uses a cream and skimmed milk mixture the cream should be prepared as follows: Let 1 quart of milk stand six hours or until the cream line is well defined, and then remove all the cream down to the milk line with a Chapin dipper. This is gravity cream, and contains about 16 per cent. fat. What remains in the bottle is skimmed milk.

The directions for making up a cream and skimmed milk mixture are as follows: Dilute in a few ounces of boiled water the amount of sugar called for in the directions, and then put in the number of ounces of cream called for, the number of ounces of skimmed milk called for, and the number of ounces of boiled water (minus what has been used in diluting the sugar). Put the required number of ounces for each feeding into the feeding-bottles, and put a small pledget of sterile non-absorbent cotton in each bottle. Whole milk mixtures are made in exactly the same manner, except that whole milk is used in place of the cream and skimmed milk

When feeding time comes a bottle should be removed from the ice chest, shaken, to mix the cream and milk, heated to body temperature and a nipple put on. In choosing bottles care should be taken that there are no square corners which cannot be cleaned. Get nipples that can be turned inside out. It is better to have them without a hole and to make the hole with a red-hot cambric needle. The hole should be large enough so that when the bottle is inverted the milk will drop rapidly, but will not run.

The choice of a formula to be used for an individual baby must be determined by the doctor, as it is impossible to give a formula which will be adapted to every baby. The food must be selected according to the needs and digestive ability of the individual.

Boiled water should be given in addition to the formula at least twice a day from birth, beginning with one-half to 1 ounce, working it up to 5 or 6 ounces a day.

The baby should be held in a semi-upright position during the feeding, as this makes it easier to get rid of the gas. After the feeding he should be placed over the shoulder and gently patted on the back to get up any gas that may be in the stomach.

On very hot days the baby should not be urged to take more food than he wants, and the baby can have on these warm days as much cool boiled water as he will take.

After the fifth month the baby should be given orange juice, starting with 1 teaspoonful, diluting it with an equal amount of water, given just before the bath in the morning. This should be increased up to one-half ounce.

At eight months the baby should be given gruel or strained cereal. If a prepared flour is used it need be cooked only one-half hour, but if the cereal flours are used they should be cooked from two to three hours. This may be given with the 9 A.M. and 3 or 6 P.M. feedings. Begin with 1 tablespoonful and work it up to 3 tablespoonfuls.

When the baby begins to have teeth he can be given a hard cracker or a piece of Zwieback to chew.

At ten months broth and beef juice can be added to the diet. These are given on alternate days with the midday feeding. The broth is made from either lamb, beef or chicken, with all the fat removed. The amount at first should be 1 tablespoonful, and should be gradually increased to 4 ounces. The beef juice is best made from the top of the round, partially broiled on both sides, cut in small pieces and the juice squeezed out. Give 2 teaspoonfuls of beef juice at first, then gradually work it up to 2 ounces. Rice may be added to the broth any time after a year.

At fourteen or fifteen months either a soft-boiled or a coddled egg may be given in place of the broth or beef juice two or three times a week. A well-baked potato three times a week may be given at the midday meal, also a little scraped beef, minced chicken or minced chop. A little bread and butter may be given at this time also; the butter should be made from pasteurized cream. Stewed fruit may also be given — either apple sauce or stewed prunes — at the 6 o'clock feeding.

At eighteen months simple desserts, such as junket, blanc mange or custard, may be given.

At twenty months green vegetables may be added to the diet, such as peas, string beans, spinach, stewed celery, stewed lettuce, young carrots and asparagus tips.

A baby is doing well when he acts well, *i.e.*, when he has no symptoms of indigestion, such as colic, gas or other evidences of discomfort, and also when the movements show the food to be well digested. A baby should gain from 5 to 7 ounces a week for the first six months and about 4 to 5 ounces after that time. He should have doubled his birth weight at six months and trebled it at one year.

Sometimes the stools of a breast-fed baby contain some mucus, are a little green in color, and often have some white curds. Provided the baby is doing well nothing need be done about it. If the baby is on cow's milk, the movements should be formed, of a light yellow color, smooth and pasty.

Sample diets for various ages are given below.

### *Diet, Thirteen to Fourteen Months.*

| | |
|---|---|
| 6.30–7. | Strained cereal or gruel, 2 or 3 ounces.<br>Milk, 8 ounces. |
| 8.30. | Orange juice. |
| 10–10.30. | Milk, 8 or 9 ounces.<br>Zwieback or plain cracker. |

1.30–2. Broth or beef juice.
Rice or macaroni or spaghetti.
Bread or toast or cracker.
Milk, 4 or 5 ounces.
5.30. Milk, 8 ounces.
Cereal or gruel.
Apple sauce or prune juice.

### *Diet, Sixteen to Eighteen Months.*

7. Cereal.
Bread and butter.
Milk, 8 ounces.
8.30. Orange juice.
10–10.30. Milk, 8 ounces.
Cracker or toast.
1.30. Egg or beef juice or scraped beef or minced chicken.
Potato or rice or macaroni or spaghetti.
Bread and butter.
Simple dessert (junket, blanc mange or custard).
Milk, 4 or 5 ounces.
5.30. Cereal.
Milk, 8 ounces.
Bread and butter.
Apple sauce or prune juice.

### *Diet, Twenty to Twenty-two Months.*

6.30–7. Cereal (any of the home-cooked cereals, such as farina, cream of wheat, pettijohn, oatmeal or ralston).
Soft-boiled or coddled egg.
Bread and butter.
Milk.
10.30. Milk.
Cracker or bread.
1.30. Meat (minced chicken, minced lamb, minced chop or scraped beef).
Potato.
Green vegetable (peas, beans, spinach, stewed celery, stewed lettuce, young carrots or asparagus tips).
Bread and butter.
Simple dessert.
5.30. Cereal.
Milk.
Bread and butter.
Fruit sauce (apple sauce or prune juice).

# DIET OF OLDER CHILDREN.

By Fritz B. Talbot, M.D., Chief of Service, Children's Medical Department
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THE general principles of food for children from two to six years of age have already been given in the Public Health Bulletin of the State Department of Health of Massachusetts, February, 1918. This bulletin should be consulted to obtain a scientific survey of the diet of children. The diet of the child may, however, be taken up from the point of view of sequence of events according to the age of the child.

During infancy the diet consists entirely or almost entirely of milk. At about six months the ferments which digest starch are sufficiently developed so that starches such as barley or oat water may be added to the formula. By the time the teeth have come through, and at the latest at about ten or eleven months, a small piece of Zwieback or a cracker may be given to the baby to chew. Educator rings are bad. It is better that they learn to chew early. Between nine and ten months mutton, beef or chicken broth may be added to the diet, one-half an ounce at first, gradually increasing up to 4 ounces a day. This may be alternated during the cold weather with beef juice, starting at first with one-half a tablespoonful and working up to 4 tablespoonsful. These should be given at the dinner meal. Beef juice has the special value of containing iron, but sometimes causes nervousness or a rash to appear on the skin; in either instance it should be omitted. It should not be given in tropical countries or during the hot weather.

At about ten months the cereal jellies may be commenced, starting with one-half a tablespoonful once a day and increasing up to 4 tablespoonsful twice a day. These should be given at the breakfast meal, and later, at both breakfast and supper. The cereal should be placed in a porringer, part of the milk poured over it, and it should be fed with a spoon. No sugar should be added. About two or three weeks later rice or macaroni, very thoroughly cooked, may be added to the diet. This should be given at the dinner meal with the broth. By the time these extra foods have been added the child should be getting less milk. At one year 32 to 36 ounces of milk in the day should be sufficient.

At about eleven months strained string beans, peas, spinach or boiled lettuce should be added to the dinner meal. This, with the foods mentioned above, will give one starchy and one fodder vegetable. These fodder vegetables have the virtue of containing natural iron, and are of especial value in pale children. Spinach is laxative, and very often is seen to come through in the stools undigested; but if the stool appears normal in all other respects, and there are no symptoms of indigestion, it should not be discontinued.

At about thirteen months baked potato, prune pulp and apple sauce may be added to the diet. The potato should always be baked and not boiled; the process of baking changes the potato starch into a more digestible form than that in a boiled potato. The cereals which may be given at this time are barley jelly, strained oatmeal, farina and cream of wheat.

Eggs may be added to the diet between fourteen and eighteen months. In children who have eczema, however, it is wise not to commence eggs until the child is one and a half years old, as eggs very often cause eczema. Even at eighteen months the first egg should be given circumspectly, because it may cause violent vomiting. The egg should be coddled.

The following is a sample of a child's diet at eighteen months: —

Milk.
Butter.
Mutton, chicken, beef broth, beef juice.
Soft-boiled eggs, dropped eggs.
Stale bread.
Toast bread.
Whole wheat breads.
Milk toast.
Zwieback.
Plain crackers.
Educators.
Peas, string beans, spinach (strained).
Summer squash.
Stewed celery.
Stewed prunes.
Barley jelly.
Oatmeal.
Pettijohn.
Cream of wheat.
Wheat germ.
Farina.
Rice.
Baked potato.
Mashed potato.
Plain macaroni.
Junket.
Asparagus tips.
Lettuce, boiled.
Orange juice.
Apple sauce.

Meats may be given between twenty and twenty-four months. They should either be beef, lamb or chicken. When first given they should be scraped until the child learns how to chew sufficiently to break up the meat and prepare it for digestion. The amounts should be small at first, starting with 1 teaspoonful and gradually working up to meat the size of a medium chop, after two or three months.

Meat should not be given every day, especially during the hot weather. It is a wise rule not to give meat more than six times a week. A dry, crisp piece of bacon may be given at an earlier age in some instances, but this should be done with great care.

After two years simple desserts, such as baked apples, stewed prunes, stewed figs, apple sauce, baked custard, corn starch pudding, bread pudding, rice pudding, tapioca, sago and blanc mange, may be added to the diet. These desserts are not essential. At this time the day's routine would be somewhat as follows: —

Breakfast between 7 and 8 A.M., consisting of cereal, egg and toast, or crackers and milk.

Lunch about 11 A.M., consisting of milk with a cracker. Some children do not require a lunch in the middle of the morning, but many children will not gain without it.

Dinner between 1.30 and 2 P.M., consisting of meat, one starchy and one green vegetable, and a dessert, consisting for example of some stewed fruit.

Supper between 5.30 and 6 P.M., consisting of bread and milk, cereal and milk, or milk toast.

Fish may be added to the diet between two and a half and three years. It should be white meated fish, such as halibut, cod or swordfish. This may be given in place of meat, but care should be taken that no bones are left in the fish, because many children have been choked by fish bones. The richer fish, with dark greasy meat, such as mackerel, salmon and bluefish, are not digested well by young children.

One of the greatest errors in diet in general practice is overfeeding in fats. For this reason a young child should not be given cream, especially if it is receiving a very rich milk. It is often necessary partially to skim a milk which is exceptionally rich. Two large butter balls a day is probably the limit of what a young child should be allowed to have. Overfeeding in fat causes gas in the bowels, loss of appetite, pallor and white stools. If the stools are light colored or white the child is getting too much fat in the food.

The following diet list is what may be given a child of eight to twelve years: —

Milk.
Mutton, chicken, beef broth.
Bouillon.
Milk soups.
Soft-boiled eggs.
Dropped eggs.
Scrambled eggs.
Plain omelet.
Lamb and mutton chop.
Beef steak.
Roast lamb and mutton.
Boiled mutton.
Roast beef.
Roast chicken.

Broiled chicken.
Minced meat.
Turkey.
Sweetbreads.
Boiled and broiled fish.
White bread.
French bread.
Whole wheat and graham bread.
Corn cake.
Plain crackers.
Educators.
Milk toast.
Oatmeal.
Pettijohn.
Cream of wheat.
Wheat germ.
Germea.
Ralston, farina, rice, hominy.
Cracked wheat.
Shredded wheat biscuit.
Baked, mashed, boiled potato.
Stewed potato.
Plain macaroni and spaghetti.
Bacon.
Raw and steamed oysters.
Butter.
Common cheese.
Shell, lima and string beans.
Asparagus, spinach, beet greens.
Peas.
Summer squash.
Winter squash and pumpkin.
Celery, tomatoes, beets.
Carrots, lettuce, onions and green corn.
Parsnips.
Cocoa.
Bread pudding
Rice pudding.
Tapioca.
Sago.
Blanc mange.
Ice cream.
Baked apples.
Stewed prunes.
Stewed figs.
Raw apples.
Figs.
Apple sauce.
Pears and peaches.
Grapes and oranges.
Grape fruit.
Bananas.
Strawberries.
Raspberries.
Blueberries.
Blackberries.
Junket.
Baked custard.
Corn starch pudding.

The following foods from this list are very much better cooked than raw: celery, tomatoes, pears, peaches, strawberries, raspberries, blueberries and blackberries. Green corn when eaten from the cob very frequently goes through the intestinal canal without being digested. It is therefore better to have the kernels cut off in such a manner that the capsule will be broken so that the digestive juices can reach the corn.

The heavy meal should be in the middle of the day, at dinner, while supper should consist of a lighter meal to insure a quiet night's sleep without nightmares.

The diet should be well balanced according to the principles laid down in the previous bulletin. It is not necessary to give large amounts of sugar to children, because all the starch that they take is turned by the digestive juices into sugar, and the child will receive enough sugar, even though no extra sugar is given in the diet. Overfeeding in sugar is one of the commonest causes of poor appetite. This happens most frequently when children are allowed to eat candy whenever they desire it.

The health of the child depends upon its diet. Nine out of 10 of the diseases of infancy and childhood are due to faulty diet. Much of the chronic indigestion of adults originates during childhood because the parents either did not know what they should give the child to eat, or they did not have the courage to live up to their convictions. A well-balanced and wisely selected diet is the best insurance for the future health of an individual. See that a child eats, but does not overeat. This can be controlled by estimating the number of calories that a child eats.

## THE CARE AND DEVELOPMENT OF CHILDREN.

By J. Herbert Young, M.D., Director, Baby Hygiene Association, Boston, Mass.

It is obviously impossible to treat adequately in the allotted space a subject which may rightly assume the proportions of a textbook. Consequently the subject-matter must be limited to those points less frequently emphasized in popular books, and to those questions, usually not medical, which the physician is asked to answer.

*Physical Development.* — The average weight of a new-born baby is 7½ pounds; this weight is doubled in five months and trebled in twelve to fourteen months. It must be impressed upon the mother that this is an average, and deviations from the average do not necessarily mean disease, and also that no baby will follow absolutely the normal weight curve. The baby's weight often becomes an obsession with the mother, and when daily weights show a loss or no gain, worry is almost certain to react unfavorably on the breast milk. A weekly weighing is sufficient for the average baby. Growth is most rapid in the first three months of the first year. During this time the average weekly gain is 6 ounces; in the second three months, 5 ounces; in the third three months, 3 ounces; and in the last three months, 3½ ounces. The average weight at two years is 26 pounds. The following formula gives the approximate weight during childhood: —

$$\text{Weight in pounds} = 5\,(n-1) + 20, \text{ when } n = \text{age in years.}$$

At four months a child will hold up the head without support, and will grasp objects; at seven months will sit alone; at twelve months, stand alone; and at fifteen months, walk. Here, again, the mother must realize that these are averages, and deviation from these averages does not mean that her child is physically or mentally abnormal.

*Teeth.* — The first teeth to appear are the lower central incisors, at the sixth to eighth month, and the first dentition of 20 teeth is complete at two and one-half years. At the third or fourth month a baby begins to have more saliva and consequently to drool. This is erroneously believed by the mother to be a sign of cutting teeth. The fact that the first teeth are only temporary seems to her sufficient justification for their neglect. As soon as a child has teeth he should have a toothbrush, and it should be used. Children often object to the strongly flavored tooth pastes and powders. Milk of magnesia diluted with an equal amount of water makes an excellent substitute.

During the sixth year the first permanent teeth appear. These are molars which come in behind the second molars of the first dentition. Parents often do not realize that these are permanent teeth, and so they are allowed to decay. Since children are rarely taken to the dentist before these second teeth appear, the physician must assume the responsibility for the teeth, especially the saving of six-year molars.

*Breast Feeding.* — The question of breast feeding cannot be brought too frequently to the attention of physicians and mothers. Although in the last decade the importance of maternal nursing has been recognized more and more, there are still physicians who will advise weaning without sufficient reason. Our knowledge in the field of the artificial feeding of infants has made vast strides, but we cannot now and never will be able to duplicate breast milk. Motherhood is an honorable profession, and its first obligation is to furnish food for the child. Of course, every mother cannot nurse her child, but every mother should make an honest effort, and should receive every help from her physician. It is not uncommon that while a mother is still in bed she does not have enough milk for her baby. This is not a sufficient reason for weaning. Supplementary bottle feedings may be added temporarily, for it often happens when the mother is out of bed again the supply of breast milk increases, and bottle feedings may be discontinued. Contrary to a more or less popular belief part breast and part bottle feeding is not harmful. Many mothers believe that an insufficient supply of breast milk means that they must wean their babies. There is a tendency to study too closely the babies' stools, or rather to subordinate the baby to its intestinal tract. Many babies are weaned because their stools do not conform to the standard.

If a breast-fed baby is gaining weight, is happy, sleeps and takes his feedings well he should not be weaned, regardless of any abnormality of the stools.

Breast milk, both its quality and quantity, is dependent upon the mother's own effort to lead a healthful life. "Business as usual" should not be the slogan of a nursing mother. The baby comes first, but in the baby's daily routine the mother should allow herself time for exercise and rest. Breast feeding is not a contraindication to the kinds of physical exercise to which she was accustomed before pregnancy, but none should be indulged in to the point of fatigue.

That there is no special diet for a nursing mother cannot be too strongly emphasized. Many mothers voluntarily put themselves on a diet, avoiding various articles of food which others have warned them against, or gradually eliminating foods which they themselves believe upset their babies. Eventually their diet is so restricted that they are getting insufficient nourishment. A nursing mother should eat everything she wants, avoiding only those articles which she knows at any time are likely to give her indigestion. Certain foods taken by the mother may upset the baby, but it is impossible to determine beforehand what these will be.

*Mental Development.* — A baby smiles at five weeks of age, and recognizes objects at two months. During the first three months, and often longer, a baby is unable to focus properly and so is at times cross-eyed. This is due to muscular weakness and lack of coordination of the eye muscles. Physicians are often called upon to reassure mothers that this condition is only temporary. At one year a child will enunciate simple words, and by the second year connect words into short sentences. Mental development should rightly include more than the development of the senses and the faculty of speech. It should include the development of right living and right thinking. A child is quick to form habits, and he is as ready to form good habits as bad if only started in the right direction. An infant's mental training and discipline should begin as soon as he is born. This can be done by establishing a regular routine, so that the same things are done at the same time each day. In this routine the most important thing is the regularity of feeding. Next in importance is sleep. The new-born infant sleeps most of the time, twenty out of the twenty-four hours; at six months, sixteen to twenty hours; and at one year, twelve to sixteen hours. Children should take an afternoon nap until attendance at school makes it impossible. A child may not always sleep, but should have this period of rest and quiet even though awake. Sleeplessness is usually due to too much physical or mental exercise. Daylight saving, while a blessing to the adult, is more likely to be a curse to the child. He arises at the same time in the morning; but because the sun is shining at bedtime he is allowed to sit up later than usual, and so loses one or two hours of sleep each day.

Since a child's education must literally begin at birth, we must look to the parents for his teachers, and especially the mother. While parents are often willing to make great sacrifices for their children, they will not make the small ones, and it is the small ones that are important to the child. Even those who are willing to make every sacrifice expend their energies in the wrong direction. Physicians are turned to for advice, and they are forced to give their advice from mere personal experience, rather than from the varied studies and experiences of many. It is to be hoped that in the not distant future our colleges will train women to be mothers.

Those who have read H. Addington Bruce's "Psychology and Parenthood" may recall the following story: —

> A father and mother, full of that sublime eagerness for the welfare of their young which every parent ought to have, took their only child, a handsome boy of three, to an old Greek philosopher.
>
> "We want you," said they, "to take full charge of our child's education, and do the best you can for him."
>
> "How old is he?" the philosopher asked.
>
> "Just three."
>
> The sage shook his head. "I am sorry," he said, "but you have brought him to me too late."

## THE IMPORTANCE OF SCHOOL HYGIENE IN THE SCHEME OF CHILD CONSERVATION.

By Taliaferro Clark, M.D., Surgeon, United States Public Health Service.

ACCORDING to a recent analysis by the Register General of Great Britain of the decline in the birth rate since the war, at the present time, every day the war continues means the loss of 7,000 potential lives to Great Britain, France, Italy and the central empires by the fall of births it has occasioned. In due course our own country is destined to suffer similar loss of lives, not only in battle, but potentially by decline in birth rate. Furthermore, the high percentage of men reported physically unfit on examination, under the draft law, is an almost tragic confirmation of the prediction of those familiar with the physical condition of children attending school.

In view of this situation it is of greater national importance than ever to start now, at the beginning of the school year, to correlate and utilize all existing agencies in enforcing all fruitful measures for conserving the health and lives of school children. It is wise to emphasize the value of health supervision of children at school, and to indicate a desirable plan for the exercise of this function.

The beginning of the practice of health supervision of school children was for the purpose of controlling the so-called communicable diseases of childhood.

From this beginning it has been extended gradually to embrace, in addition to the direct supervision of the physical and mental health of school children by means of medical inspectors and nurses, the regulation of conditions which have an indirect bearing on their health, such as the construction, equipment, maintenance and sanitation of school buildings, the selection of school sites and the establishment of gymnasiums and playgrounds.

Briefly, the advantages of effective health supervision of school children may be considered from the standpoint of the sanitarian, the educator, sociologist and political economist.

In malarial districts, and where hookworm, trachoma or typhoid fever is of frequent occurrence, the health of the community as a whole is lowered as well as its collective earning capacity. Therefore measures devised for the sanitation of such districts and for the removal of the causes of such diseases are of marked benefit to the health of the children reared in such communities. Their sanitation in many instances, however, can be brought to pass only by educating the people in matters sanitary, for which purpose no more potent or adaptable instrument can be utilized than the educational effect of health supervision of schools and school children upon the younger generation.

The effect of such supervision is shown not only in better control of endemic conditions, but it is a potent factor in reducing the prevalence of the less common affections which, in the aggregate, materially lower the community health. This is due, in great measure, to the knowledge of the principles of personal hygiene imparted to so large a part of the population. For instance, it has been shown that 42 per cent. of the deaths annually occurring in the United States might be postponed if proper hygienic measures were employed. Furthermore, it has been shown by one of the great life insurance companies that deaths from degenerative diseases in the United States have increased during the last thirty years on an average of 86 per cent., and that these diseases constitute about one-fourth of all deaths. Their prevention is largely a matter of personal hygiene. The foundation of many of them is laid in childhood during an attack of one or more of the affections popularly recognized as peculiar to that age, that are largely preventable through the practice of personal hygiene.

Sanitary and health supervision of schools, therefore, may be made to act in two ways for the improvement of public health: (1) through education of the people in public hygiene, and (2) by the inculcation of the principles of personal hygiene among children who are mentally receptive, as distinct from adults set and fixed in personal habits, and who are, therefore, not easily influenced to change insanitary practices. It is for this reason that the sanitation of a community dependent upon individual co-operation will not be permanently effective unless an effort be made by precept and by example to educate the children of these communities in these principles.

In the case of the so-called preventable diseases of childhood the necessity for such education is very apparent. It is not unusual for mothers to express the desire for their children to contract certain of these diseases at an early age, under the mistaken assumption that they are a necessary evil to be endured by all sooner or later, and that they are, moreover, practically harmless at this period of life. The activity of medical school authorities in suppressing them, wherever practicable, exercises an educational effect on the community, and emphasizes the immediate and remote dangers of these infections that are the precursors in so many instances of the degenerative diseases of later years which so materially shorten life.

The educational value of school hygiene must be considered from the standpoint of both the child and the teacher. The great industries of the country are alive to the fact that the health of their operatives is a valuable asset. A number of these interests, aside from humanitarian reasons, find it profitable to exercise a medical and sanitary supervision over their employees, shops and factories. It has been found that provision for proper lighting, heating and ventilation of workshops and factories results in so great an increase in the efficiency of the force working in such improved environment as to more than counterbalance the expense of such improvements.

Like measures are profitable from the standpoint of education when applied to school children and the buildings used for school purposes. Children who attend school are laborers engaged in a very strenuous work, a work which is compulsory in a number of States. The classrooms in which so large a number of their impressionable years are passed are but workshops devoted to this particular use. Due regard to the construction of school buildings, and their adaptation to the purposes intended, should result in a proportionate increased efficiency of the student body. The mental processes of a child suffering from partial heat stagnation in an overcrowded, overheated, poorly ventilated classroom are at a low ebb. In other words, the poor environment of this little worker results in reduced mental efficiency and slow response to educational effort.

Furthermore, a large number of children are under an educational handicap by reason of physical defects which hamper them in attempts to take advantage of educational opportunities. In communities where medical services are limited these defects are often unrecognized. In other instances the possibility of the prevention or cure of hampering defects is not entertained because of lack of knowledge in such matters. It is within the province of school hygiene to take cognizance of these conditions, to suggest and provide, if need be, the remedy, and to assist in placing such pupils in more favorable circumstances for the acquirement of an education.

Other children are sadly hampered by reason of certain mental faults which cannot be ascribed to demonstrable physical defect. The recognition and correction, so far as may be, of these mental conditions must be by and with the advice of the medical psychologist. Expert supervision enables the educator to better group children in homogeneous classes with increased facilities for special and individual instruction. The presence of one or more defective children in a class exerts a retarding influence on the class as a whole, the advancement of which is usually measured by that of its slowest members. The homogeneous grouping of children in accordance with their mental ages is followed by more rapid advancement of backward pupils in special classes, and a greater opportunity for progress of those in regular classes freed of the retarding elements.

Finally, a properly conducted medical and sanitary supervision of schools, by restricting the dissemination of communicable diseases among school children, results in the saving of time at school which would otherwise be lost. Time thus saved not only is of great assistance to the educator, but also exerts a favorable influence on the advancement of the child in intellectual training.

The potentially grave social consequences of illiteracy were recognized by the founders of our government, as indicated by the establishment of our system of free schools. Children who are unable to attend school largely remain illiterate. To them the door of professional attainment is closed, the ability to discharge the higher occupations is strongly diminished, and they become, in a measure, citizens of an inferior type. The culture, prosperity and health of most communities may be noted easily by observance of local facilities for educational advancement, as represented by the location, construction, equipment and sanitation of their schools. The large number of community dependents among those who have neglected, or who have been unable to take advantage of, educational opportunities, and among their offspring, presents problems which are receiving the careful consideration of thoughtful people everywhere, to the end that contributing causes may be removed. Because of inattention to the construction, equipment, maintenance and sanitation, schools very generally are not sufficiently attractive to a large part of the youthful population, and a number of them therefore refuse intellectual training. The association of truancy, illiteracy, juvenile delinquency and crime is now well recognized. Efforts should be directed to make schoolhouses, school grounds and school courses more attractive than the outside associations of that class of the school population prone to truancy.

The economic aspects of school hygiene are manifold. It is of the greatest interest to the taxpayer that the public schools be administered as effectually and as economically as possible. To this end it is necessary to apply the scientific knowledge of the school hygienist so that the efforts of the educator may become most effective. It is not alone sufficient to provide schools properly constructed and adapted to educational uses, but they must also be sanitary, — hygienically suitable. Furthermore, expenditures for these purposes will be, in a great measure, lost unless supplemented by an effectual medical supervision of the child, physically and mentally, to prevent and correct hampering defects, to lessen sickness, to make mental classifications most advantageous for educational purposes, and to reduce time lost from school through preventable sickness. Every day lost from school is so much money wasted for the taxpayer. In the aggregate, time lost from school, money unwisely expended, unrecognized mental and physical defects, the results of truancy and illiteracy impose a burden upon the community wherever the prevention of these conditions is neglected.

## SCHOOL HYGIENE AND CHILD CONSERVATION IS A MATTER OF NATIONAL CONCERN.

It has been tritely said that "the hope of our country is in the youth of our land." Measures, therefore, intended to preserve and augment the individual mental and physical efficiency of the children of the land are matters of national concern. The prevention and correction of physical and mental disabilities which prevent a child from taking full advantage of educational opportunities offered by the State is a prime duty of the State.

It is recognized that a large majority of children attending school are without adequate medical and sanitary supervision. The results of such neglect are far reaching, extend beyond the limits of the community most intimately concerned, and thus affect materially the national health. It is therefore the duty of the national government as well as of the State to take cognizance of these conditions and co-operate for their correction because —

1. The physical standard of the American child is not known. Careful measurements of thousands of children under uniform regulations in widely separated sections of the country are necessary for the establishment of physical standards which would become the basis of all future studies of social conditions affecting race development.

2. The enormous additions to the country's population by immigration is certain to make an impression on generations yet unborn. The assimilation of large numbers of people differing in physique, mental activity, habits, customs and standards of morality is a wonderful process in evolution in this country, the effects of which it is desirable to gauge.

The results of studies of the mental and physical status of alien races made at the various ports of entry to the country, in comparison with results of similar studies conducted over sufficiently wide areas affected by immigration or otherwise, may be utilized for the establishment of the normal, physical and mental standards for the American child; for the determination of the effect of the assimilation of alien races on the physical and mental health of communities in which such processes are in operation; for the estimation of the effect of change of environment and of American institutions on alien children and native children of foreign parentage.

3. Regulated physical and mental training of the child is conducive to the mental and physical efficiency of the whole community. No sick community is likely to be a prosperous one. The prosperity of the nation, however, on final analysis, is largely measured by the

prosperity of its constituent elements. The Federal government, therefore, is warranted in taking note of conditions which may affect the growth and development of rising generations, so that adverse influences, wherever found, may be corrected.

This is especially true of neglected school life in many rural districts, where there is very apparent need of the development of community sanitation, the detection of serious mental defects that require institutional treatment for the protection of the mental health, and the economic and efficient administration of education.

4. The supervision of the health of persons of school age is of importance, also, by reason of certain influences of school life on fitness for military service. Furthermore, following the war education will be one of the great problems confronting the country. To be successful, effort in this direction must be correlated with measures designed to promote the mental and physical efficiency of the student body.

The following is suggested as a practical plan of health supervision of children attending school: —

1. Provision and supervision of full-time school physicians and school nurses.
2. Maintenance of health supervision of school children to detect and correct physical and mental defects and to control communicable diseases.
3. Determination of normal standards of nutrition and development, and adoption of measures designed to promote physical development to increase vital resistance.
4. Practical instruction in the principles of general and personal hygiene.
5. Establishment of school clinics for the treatment of minor ailments and for the correction of the physical defects of necessitous children.
6. Supervision of the home and school environment for the prevention of improper seating, illumination, ventilation and sanitation, and for the detection of incipient cases of communicable diseases.
7. Physical examinations to determine the physical fitness of children leaving school to enter particular industries.
8. Education of the public to create a demand for health supervision of school children.
9. Establishment of open-air schools for tuberculous children.
10. Mental examination of school children to determine and prescribe the most suitable treatment and training for children who are unable to profit by the usual courses of study.

# MENTAL HYGIENE FOR CHILDREN.

By L. E. Emerson, Ph.D., Psychologist, Massachusetts General Hospital; Examiner in Psychopathology, Psychopathic Hospital, Boston.

FOR the purposes of mental and nervous hygiene in children the essential thing to understand is the nature of the individual child as a member of society, and his personal action and reaction in social relations, especially in the family. From this point of view action is the result of inward craving, or desire, and reaction is the result of external, family or social excitement. Obviously, then, there are two kinds of mental and nervous activity in a child, and we must take note of the distinction. Let us consider, first, cravings.

The baby needs nourishment and craves food. This he gets by nursing. If a baby is a little off the line of normality in that he does not know when he has had enough he will keep on, if not interfered with, and overeat. This will not only upset his digestion, but will also affect him nervously, and will have started him on the road to later nervous and even mental disturbances, the real origin of which has been obscured by time.

On the other hand, if the baby does not get enough nourishment, either because there is not enough milk or because he has not energy enough to nurse hard enough to get it, he starts then and there on a course that may lead later to serious nervous and mental conditions.

Let us look for a moment now from the family or social point of view, and see what we shall see.

The baby who gets either too much or too little food becomes a crying, ailing baby; the mother allows him, perhaps, to nurse too long or not long enough, or gives him a pacifier, or lets him suck his thumb or a corner of his blanket, — anything, so that she may have a little immediate peace, and not disturb the neighbors.

From such small beginnings may come later hysterical vomiting, biting of finger nails, digestinal disturbances due to purely emotional causes, self-indulgences of various sorts, paroxysms of passion, etc., into the details of which we have not space or time here to go.

Let us jump ahead to the time when the child enters into more complex social relations with his family and others.

Following out his internal instincts or cravings he tries to take something from his brother or sister; he tells a little lie; he hits his father or slaps his mother; he runs away; or, as in the case of one boy I know of, he digs out with his knife the eyes of a frog.

According to the reaction of family or friends will his future reactions be more or less determined. If the child is overpunished, and he is naturally of a sensitive disposition, the beginning of a future neurosis may be started at that time. If he is not adequately brought to book he may continue a course that will land him either in immorality of various sorts or in insanity. The one or the other end depends partially on the mental and nervous hardihood and courage of the individual.

One thing of immense importance should be realized by parents, educators and the public generally, and that is, children react to the emotional attitude of the one with whom for the moment they may be concerned rather than to any rule of reason expressed in words. The result is children reflect back to their parents, educators and others the real emotional state of parents or others, whether it is concealed or obviously expressed. This makes it very hard for any one trying to train a child or guide him in the way he should go, because he himself reacts to the attitude of the child, and tends to give back just what he gets. No one is completely mature and reasonably self-controlled, and the primitive emotional attitudes of the child arouse equally primitive attitudes in the adult; and unless he knows this and makes allowance for it, that is, intelligently controls it, he is apt unconsciously to be driven into doing things which may start the child on the slippery path to a future neurosis, or even mental breakdown.

An illustration is worth reams of reasoning. A child is naturally afraid of loud noises. A little boy I know of was terrified by thunder, and ran in fear to his mother. She would rush into a dark closet with him, and, holding him in a panic and agony of fear, remain there till the shower was over. Later this boy became a man, and even then, in a thunderstorm, would take refuge in a closet and stuff his ears full of cotton. This tendency to react with fear became so powerful finally that the man had a nervous breakdown and thought he was going insane. The boy who dug out the eyes of a frog was given a terrible beating by his father. The result of that was he remained cowed the rest of his life, and he, in turn, had a nervous breakdown due to fear. Now, in both these cases the primitive instincts of the child aroused equally primitive instincts and reactions in the parent, and instead of being trained and educated, as should have been the case, the child was started on a course that led finally to a neurosis.

Fear may be said to be back of much, if not all, functional nervous and mental disturbances. But behind fear lies desire. All fear may be expressed in terms of cravings or desires. Only when this is done do we have the clearest possible insight into any given action or reaction; for example, fear of death may be expressed in terms of love of life. One who does not love life does not fear death, and one who does not love social approbation does not fear social disapprobation. In the concealment, repression and dissociation of the conscious self from natural individual instincts, due to the fear of social disapprobation or desire for approbation, lies the beginning of many a mental or nervous breakdown. The most powerful manifestation of this fear, or desire, is in the family and its relations.

One of the many burdens a little girl had to bear, under the combined load of which she finally broke, was the ill-concealed lack of love between her parents. She remembered her father received from her mother on his birthday once a batch of bills instead of a letter of love. And to this day she is apt to start with an abnormal fear at the sound of a door slamming, because that was the way her mother would often leave the room after having had "words" with her father. No amount of pretended love could take the place of real love. The end of one chapter in this particular book of life was a nervous breakdown so severe as to be properly included, perhaps, in the manic-depressive group of psychoses. Another child, a boy this time, labored under the knowledge that he was not wanted by his parents. He had a nervous breakdown in later life, one of the reasons for which was his wrong early start in emotional reactions.

Parents, educators, indeed, everybody, should know their liability to emotional reaction to primitive emotional situations, and, seeing their own tendencies and more or less hidden motives, be on the watch for them in the children over whom they may be supposed to have some control.

To prevent possible dangerous results of primitive mental activity in the child, one should know what is really going on in the child's mind underneath the surface of consciousness. The child's instinctive tendency is to conceal any thoughts or motives he thinks may be open to possible criticism, and in a sensitively predisposed child such concealment may reach pathological proportions, reaching finally, perhaps, a nervous collapse. Even acts which are highly dangerous to the individual may be more or less easily concealed and result in mental disaster. Signs of danger, of course, are not wanting, but they may not be noticed unless looked for, and fear of the revelation may prevent parent or person in authority from finding out what really is the matter until it is too late easily to do anything.

The most difficult problem to handle in the growing child is the problem of sex. Not only is this difficult on account of its power, but also on account of its subtilty. Obviously sexual morality must be maintained. The problem is how best to do it without injury to the individual.

The rising tide of sex-craving is perhaps the most powerful instinct possessed by the individual, next to the instinct of self-preservation. Naturally this instinct has to be kept within bounds, and its satisfaction delayed, till all proper social requirements have been satisfied. How is this to be done?

If too much fear is included in the suppressing forces, individual injury will result through repression and consequent mental dissociation. This will show itself in nervous and mental symptoms; sometimes even in physical symptoms. If too little fear is inculcated the individual tends towards immorality, which is worse. What is to be done?

Parents, and the public generally, must have insight in the laws of nervous and mental development, and must administer these laws wisely and humanely. They must understand the subtile and remote manifestations of hidden instincts. They must be enlightened themselves in order to enlighten their children or take care of others or protect themselves against others. They must rise from a life ruled by fear alone to a life ordered by reason and impelled by affection. They must know themselves, and, knowing, act.

By way of summing up let us take a bird's eye view of the situation. The individual is a more or less organized system of instincts of two orders, one narrowly individual and personal, such as self-preservation and sex, the other, social. Now the social instinct, which is more or less aroused and perhaps even created by parents, family, friends and the outside world generally, so far as it is personal, inhibits and controls or releases the individual instincts. If the individual instincts are very powerful and the repressing social instinct is even more powerful, the individual suffers in proportion to the nervous and mental tension he finds himself under. This may go so far in some cases as to result in actual insanity, or in other cases the result may be only a vague feeling of nervousness, while there may be all grades of nervous or mental disturbances in between these extremes.

Successful mental and nervous hygiene for children will depend on knowledge of individual and social instincts in all their various and subtile manifestations, and a wise guidance of these instincts during their development. Danger lies in either one or the other of these two orders of instinct being too strong, or in their being so exactly balanced as to prevent the individual from action of any sort. These dangers may be met, however, at least in part, by education in the nature of the self and the psychology of the individual in society.

Perhaps one would not be far wrong in saying that the end, or purpose, of life was an ideal society. To have an ideal society we must have ideal individuals; and to have such, society must have proper and adequate forms into which all instincts may be organized, harmonized and not destroyed, and proportioned in beauty, love and truth into the nearest approach possible to human perfection.

## THE COST OF A WELL BABY.

Mary Beard, R.N., Director, Instructive District Nursing Association.

UNDER the leadership of the State Department of Health the women of Massachusetts, through the Council of National Defense, have embarked upon a great undertaking. We are trying to save the lives of 3,094 Massachusetts babies before April 6, 1919. This is the quota for our State, and we are stimulated by the knowledge that women all over the country are engaged in the same enterprise, — to reduce the 300,000 unnecessary infant deaths of last year by 100,000.

At the beginning we must open our minds to appreciate that we are dealing with all the babies born in Massachusetts during the past year, and with all the babies who died in that time. This includes babies whose parents have large incomes, families of very moderate means, and babies whose families have barely enough for the common needs of every day. We are also considering the baby whose parents are dependent. It is a common error, in considering this subject, to forget the other babies in our concern for the more spectacular baby who is just above or just below the line of dependency, and yet by far the most important group, numerically, is the family of moderate means. All our methods will fail to reduce infant mortality if we cannot learn to regard it as a common enemy, and to prepare to meet it with a united front.

New Zealand has gone far ahead of us in this way of regarding the subject. The Infant Welfare Stations of New Zealand are centers to which *any* mother may and does bring her baby if she is ignorant of the best method of bringing him up in health and safety. The little houses or cottages where this "mothercraft," as the people of New Zealand call it, is taught, are very attractively furnished, set in the midst of lawns and flowering shrubs. They are conveniently situated in various local centers which are easily accessible. They are supported by government grants and private contributions in a ratio of 50 to 50. It is popular to make use of them.

Since we know that ignorance and poverty are the principal causes of infant mortality we must make our conception of the word "ignorance" big enough to include all the mothers who need teaching. New Zealand in 1916 had an infant mortality rate of 50.05, while in the United States 100 was the infant mortality rate for the registration area in 1915, and 70 the lowest figure for any one of the States in the birth registration area (Minnesota).[1]

If we are to save the lives of 100,000 American babies this year we must recognize that these babies come not alone from those homes where a proper standard of living cannot be maintained on the available income, but that they may come also from any other home in any town or city or country district. When we recognize the problem as universal, accepting the conclusion that it can be solved only by enlisting the interest of *all* women in the community, when we make our approach from the democratic starting point of public protection of motherhood and infancy *for the sake of the American public* itself, we have begun in the right way.

We need to inform ourselves on two fundamental subjects, — the birth rate in the United States, and the machinery which is designed to register the births of American babies.

Both of these subjects have been presented recently by Louis I. Dublin, Ph.D., and are now to be had in pamphlet form under the titles: "The Significance of the Declining Birth Rate"[2] and "The Present Status of Birth Registration in American Cities and its Relation to Infant Mortality."[3]

These two studies are of great interest and value to us at this time and they should be thoroughly assimilated by those who are actively engaged in the child welfare campaign.

The startling fact that is brought to our attention in "The Significance of the Declining Birth Rate" is that "There has been a marked and continuous reduction in the birth rate in the United States for a period of years."

Professor Wilcox in a recent paper has shown that the birth rate in the United States has decreased 50 per cent. in the last one hundred years. In Massachusetts reliable figures have been available longer than in the other States, and we are therefore able to learn that the birth rate has decreased continuously for forty years, and that this decrease is chiefly in the native stock. Since so large a proportion of the young children of America are foreign born, or are the children of the foreign born, one reason is apparent for the economic pressure which plays so important a part in the problem of infant mortality.

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[1] Annual Report, Chief of the United States Children's Bureau, 1917, p. 48.

[2] Reprint from Congressional Record, Jan. 11, 1918.

[3] Reprint Transactions American Association, Study and Prevention Infant Mortality, seventh annual session.

How may a community know what it has to do to lower its infant death rate?

First of all, by informing itself of that death rate. This would be a very simple matter if all births of all babies were always recorded promptly. Of course this is very far from being true.[1] We must know the infant mortality rate of our own town. This is the ratio between two figures, — the number of babies born and the number of babies dying within a given time, usually a year. Sometimes where birth registration is bad a figure has been adopted by the United States Census Bureau based on the infant deaths in one year in relation to the living children under one year. This has been known as the "infant death rate." One must doubt the accuracy of a birth rate in almost any city in this country if it is less than 20 per 1,000 of the population. In some cities where there are many foreign born a birth rate under 25 per 1,000 is questionable.

So far we have been concerned with three points of importance in our baby welfare campaign, no one of which has direct bearing upon the question of family income with which this paper must deal. However, it has seemed to me that before admitting the questions relating to income and daily expenses to their proper places in our campaign, we must firmly establish the foregoing points and recognize them as limiting very materially questions concerning baby welfare and the family income.

To sum up, we must make our conception of the problem include *all* the community, and we must so arrange our educational centers for mothers that they will be availed of by all mothers regardless of their income or standing in the community. We must, in other words, provide a service which every independent family will be glad to use at need.

Having this recognition of the entirely catholic character of our undertaking, we must go a step further and realize fully the danger we are in from the unwillingness of American fathers and mothers of good native stock to have families large enough to keep the balance better adjusted between the new Americans, who in most cases have not yet reached an earning capacity capable of providing proper standards of living, and those who have lived in this country for generations.

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[1] The Present Status of Birth Registration in American Cities and its Relation to Infant Mortality, Louis I. Dublin, pp. 1, 2, 7, 8, 9.

We must have registration laws and we must enforce them, for without knowledge of what we are combating we can do no intelligent work.

When all has been said it is most tragically true that poverty is responsible for more baby deaths than any other cause. Considering only the children of parents whose very self-respect prevents their seeking the help necessary to the baby's life, we find ourselves facing one of the great economic questions of our day, — the inability of a large percentage of American families to keep in a state of health and at the same time live within the family income.

To come into the world a well baby and to continue to be a well baby up to five years old, the home must contain certain essential elements. Some of these are sunshine and fresh air, proper food and a proper place to sleep both for mother and baby, good medical advice to be had in time to prevent illness and correct defects, and, more important than all, a mother not too overburdened with work to give the baby regular and intelligent care.

A very superficial study of the homes in which babies died this last year would show how general is the lack of many of these necessities. If we were to visit intimately in these homes we would find ourselves seeking answers to questions like these: How can housing conditions be improved? How can better food be provided for the mother of the baby? How can she be kept from overwork before and after the baby is born? How can she be given reasonable opportunities for rest and for recreation?

In her annual report for 1917 Miss Lathrop gives some valuable tables, compiled by the Children's Bureau, which show the relation between the wages of the father and the infant death rate. In eight cities studied the death rates were as follows:[1] —

Among babies whose fathers earned —

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|---|---|
| Less than $550 a year, | 162.5 |
| $550 to $849, | 119.8 |
| $850 to $1,049, | 95.0 |
| $1,050 and over, | 61.7 |
| $1,250 and over, | 62.5 |

Such a difference as this (100 between the baby death rate of those whose fathers earned $1,250 and over, and those whose fathers earned less than $550) makes us go immediately to the root of the matter and seek by every means to find a way of protecting motherhood and infancy through a system of government grants such, for instance, as maternity insurance. To cite one story typical of many low-wage families: —

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[1] See annual report, Chief of Children's Bureau, 1917, pp. 14, 15.

The father, an Italian, working in a meat market, earned $15 a week, an average of $780 a year. He was a good workman, intelligent and steady. There were three children, and another baby was expected. This man was careful and thrifty, and had succeeded in saving $300, which was put away in the savings bank. The accident overtaking this family was somewhat spectacular, but was no more tragic than that resulting from many an everyday illness which may come into any family at any time. In returning from his work one night he was mistaken for another man. He was stabbed, and was taken immediately to the Relief Station, where he stayed for twenty-one days. After that he spent three months in the Boston City Hospital. After that he was cared for by a private doctor in his own home. In all, he was out of work for eight months. During this time the fourth baby was born. He was obliged to borrow the money for the confinement, and during the last weeks of his disability went into debt for all that his family had to live upon.

It is necessary that, as a race, we grow up well and without defects; but it is impossible, as our economic system is at present constituted, for a large percentage of Americans to secure the advantages of preventive medicine because it is too costly. Many studies of the cost of community sickness have been made, and present valuable evidence of this.[1]

Such sickness surveys as these show the loss in working time which may easily be reduced to the money loss for any family, but cannot measure the resulting anxiety and tension in the family, nor show how this anxiety means that the essential visit to a dentist or an oculist is put off from day to day, the country week given up, the supply of milk for the family cut down to reduce the milk bill, nor can it show how the mother of the family, although she is expecting another baby, is forced to take in paid work in addition to her own housework. In "A Sickness Survey in Boston"[2] we are told that the economic loss resulting from sickness involves "the loss of earning for about seven days per person per year." This would mean that the father of the typical family referred to earlier would have lost only $17.50 during the year, a sum he could easily recover, if illness were divided impartially among all persons studied; but of course the economic loss from illness does not distribute itself conveniently and impartially in this manner.

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[1] Community Sickness Survey, Lee K. Frankel and Louis I. Dublin; A Sickness Survey of Boston, M. L. I. C., 1916; Public Health Reprint No. 326, Rochester, N. Y.; Sickness Survey of Pittsburgh, 1917.

[2] M. L. I. C., 1916, Lee K. Frankel and Louis I. Dublin.

One great question that has an intimate bearing upon infant welfare is that of the presence of mothers in industrial establishments. This has grown to be especially important in connection with war industries. The French Academy of Medicine has adopted certain resolutions on this subject which may prove of value to us.[1] M. Adolphe Pinard, as chairman, with a committee of nine well-known obstetricians and pediatricians, presented six resolutions all bearing upon the protection of women in industry. They deal with the nature of the employment to be permitted to mothers, periods of rest for four weeks before confinement, facilities for consulting a doctor before and after the baby's birth, a woman supervisor in factories employing women, rooms in the factories where mothers may nurse their babies, the award of premiums to nursing mothers while they keep at work, and a government bureau to provide funds to compensate for loss of pay when it is necessary for pregnant or nursing women to stay at home.

A government bureau to provide funds brings us to the consideration of some reasonable plan for the public protection of motherhood and infancy. Without such a plan we must leave many of our babies exactly where they are to-day, — exposed to the hazards of a very high infant mortality rate. (It is nearly twice as dangerous to be an American baby as it is to be a New Zealand baby.)

England, through its system of maternity insurance, recognizes the necessity for such public protection. The Local Government Board for England and Wales has undertaken to make grants[2] amounting to 50 per cent. of the cost for infant and maternal welfare work to those county councils and sanitary authorities which will themselves undertake to pay 50 per cent. of the cost of such work. It will also, under certain conditions, make the same grant to voluntary organizations.[3] The government grants of New Zealand encourage the public to subscribe locally for the support of those small cottages where "mothercraft" is so successfully taught. The government grants of New Zealand are in the ratio of 50 to 50.

On Dec. 3, 1914, 2,000,000[4] marks a month was provided by the

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[1] Some Economic Hints from France, Theodore B. Merrill, M.D. Reprint, American Journal of Obstetrics and Diseases of Women and Children, Vol. LXXVI., No. 3, 1917.

[2] Report, Carnegie, United Kingdom Trust, 1917, pp. 90, 91. Great Britain, Local Government Board Official Circular. Maternity and Child Welfare, July 30, 1914. Sept. 26, 1916.

[3] See Review of Reports on War Work in England, France and Germany, by Dr. Mabel Belt. Transactions, eighth annual meeting, A. A. S. & P. I. M.

[4] Health Insurance, I. M. Rubinow. Henry Holt & Co., pp. 130.

German government for the purpose of giving certain benefits at childbirth to the wives of men at the front. Such an expenditure of German money at such a time, we may be sure, was made only because the economic wisdom of the public protection of maternity is in Germany a fully established fact.

Bad housing, overcrowding and its consequent irregularity of living, insufficient and inadequate food, a mother so overworked that she cannot properly care for her baby, are some of the evils that accompany low wages, and that have such a disastrous effect upon babies.

To correct these evils we must face almost all the great social questions of our age.

One thing is evident, and that is that we cannot work to save the babies without facing these issues, studying the experience of others, and making up our minds concerning our own duty as Americans. It is only public opinion that will create and enforce social legislation.

THE COMMONHEALTH.

Monthly Bulletin of the Massachusetts State Department of Health.

*Sent Free to any Citizen of the State.*

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*The Community's Responsibility.* — It is generally agreed by every one that the conservation of human life and health is a matter of the utmost importance to the Commonwealth and to the nation. In spite of this fact, nevertheless, we find the community very slow in grasping the idea of the common health as distinguished from the health of the individual. This is especially true with regard to child conservation.

The reasons for this attitude are not entirely clear. To be sure, the knowledge that disease can be prevented is a comparatively recent acquisition. Still newer is the idea of correcting, through medical inspection of school children, defects which later may become incorrigible; as is also the idea of prenatal care and well-baby clinics. Yet many other things equally recently acquired are generally taken up and much money spent for their development. In the field of public health those things which are relatively unimportant — collection of ashes and garbage, for example — still receive emphasis, to the exclusion of urgent things like the prevention of infant mortality. The fact that life and death are phenomena of unfailing regularity, together with the undeniable tendency of the human animal to "take a chance," is more or less responsible for the attitude of city governments, and town meetings as well, in appropriating thousands for new buildings, but not a cent for saving children's lives. The man who is well cannot conceive that he or his is likely to be sick; some other fellow's family may have sickness and death, but not his own.

The need for supervision of the child on the part of the community is not yet entirely recognized, even by those who should be the first to see it. Many physicians and dentists, for example, see in school inspection an unwarranted interference with their work. The general experience has been, however, that where dental inspection has been stressed in the school, the increased interest in good teeth on the part of the public has resulted in a larger number of visits to the family dentist, and so it is with the family physician.

The result of all this is that in the past, groups of private individuals of unusual foresight have been the ones who have grasped the principles of public health, and have started enterprises which later have been taken over, more or less grudgingly, by the municipalities, that have reaped the benefit of the pioneer work.

It may be said at once that there are certain advantages inherent in private health agencies. Money may be forthcoming which would never be available for public enterprises. A large number of persons become interested in humanitarian projects. It is possible for private organizations to combine bedside care with strictly educational public health work, and to take fees for their services. The fact that such societies can do bedside nursing often predisposes communities, especially those in the country, towards the work. Moreover, enterprises such as these are not hampered by what we usually term politics. This advantage, however, is often more apparent than real, since not infrequently a small nursing association is thoroughly in the grip of a narrow-minded or self-seeking group quite as opposed to progress as is the average professional politician.

Turning now to the other aspect of the question, — governmental control of preventive health work, — what are the advantages and disadvantages? Why have governmental supervision of public health when private agencies are available? One reason is that there are occasions when no one but the board of health can legally take action, as in cases of communicable disease. Or again, in school inspection, the authority of the school committee or board of health, as the case may be, must be invoked. But aside from special occasions of this sort child conservation should be taken over by the community as a whole, because it is, in the last analysis, a community responsibility. The individuals of the community will never grasp their responsibility until it is thrust upon them. One cannot learn to swim merely by watching others swim. It is no excuse to say that politics control many health departments or school boards. They do, but only because the community is willing to allow politics to trifle with the lives of its babies. If the community were to take more interest in the doings of its health department, and, after giving it sufficient money really to do things, were to hold it to strict accountability, we should have less of the evils of politics.

Part of the fault undoubtedly lies with the health departments in that they do not push sufficiently the educational aspects of their work. Boards of health should be prepared to take the lead in health matters, not merely to take things up after they have been tried out elsewhere. In this they may well learn from departments of agriculture. They should not feel irritated if the citizens of the city or town come to ask questions as to what they are doing. Not only that, but their good deeds should be so obvious that people will not have to ask about the broad aspects of their work.

On the other hand, the private societies interested in work for children can do an incalculable amount of good by keeping in touch with health departments, aiding them in their projects, demonstrating if need be, gaining public support for worthy projects, and carrying on an increasing educational campaign.

Prenatal nurses and clinics, well-baby clinics, following up of reported births, — all are responsibilities which the community cannot dodge and will not dodge if it is to show even average business sense, because money spent for these things shows results in lives saved, in increased reputation for the town as a safe place in which to live, to say nothing of increased happiness for its citizens. Boards of trade might well add details of good municipal health supervision to the sign boards on which they are wont to emblazon the superior advantages of their town to the incoming automobilist.

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*Child Conservation from a Dentist's View Point.* — A neglected mouth and decaying teeth are a prolific source of filth. Decomposing food within the mouth is in constant contact with the crypts of the tonsils, and becomes the best culture media for bacterial propagation. The toxins elaborated within the crypts of the tonsils are highly irritating; some are absorbed, while others induce local reactions upon the mucosa of the throat and the nasopharyngeal region, giving rise to adenoid enlargements and not infrequently enlarged cervical glands. Neglected teeth and an unhygienic mouth soon lead to imperfect use of the teeth in the mastication of food. With the nerve or pulp of the teeth exposed the child quickly bolts its food. This, irrespective of the amount or quality of food ingested, soon leads to faulty digestion and acidosis, which is easily demonstrated by simple tests within the mouth as well as by the visible destructive action upon the enamel of the teeth.

Lack of use of the teeth and muscles of mastication soon impairs the whole facial structure, which in a young child is in process of development within and without. The materials necessary for growth of bone and other tissue are dependent upon a good blood supply; this supply is inhibited through lack of use. Consequently, a mild form of stasis existing about the mouth and within the nose leads to congestion and atrophic changes in the various tissues, the net result of which is seen in malformed and inharmonious lines of growth of the external face. When the teeth have failed to contact normally and the dental arch becomes deformed we can be sure that the structures immediately adjacent suffer in direct proportion to the extent of the dental irregularity. This means one or more of the following defects: a collapsed anterior nose, at the vestibule; a deviated septum; a too close approximation of the lower turbinates to the floor of the nose or to the septum; lessened drainage, ventilation and sanitation of the nasal secretions, — all of which lead to poor health and poor growth.

With even so concise a summary of some of the evils attendant upon the lack of care of the mouth and teeth during childhood we readily appreciate how great and vital is our responsibility to the children. We are in duty bound to provide some means for their protection against the ignorance and the lack of interest on the part of the parents. What is the use of treating hundreds of children in our hospital clinics who suffer as a result of lack of care in oral hygiene when a little provision through education and training at an early age would prevent so much? A remedy will be found in a closer co-operation between the departments of health and school nurses and dentists within every community, and the employment of trained dental hygienists where there are great numbers of children to be cared for. Our statistics from such sources would soon show a marked decrease in the numerous ailments of childhood and better conservation of our future men and women. — George H. Wright, D.M.D.

## A MESSAGE TO PHYSICIANS.

By Alec Nicol Thomson, Major, M. R. C., Chief, Subdivision of Venereal Diseases, Massachusetts State Department of Health.

THE following figures will give an idea of the progress to date of the campaign against venereal diseases in Massachusetts. While these figures are encouraging and bespeak a fine spirit of co-operation on the part of the medical profession as a whole, there is nevertheless much yet to be accomplished before figures can be presented which will actually indicate the prevalence of these diseases in the communities of our State.

A peculiar responsibility was thrown upon the shoulders of the physician when the decision was reached that syphilis and gonorrhœa should be made reportable by number only, unless lapsing treatment. It is the physician alone who holds the secret of the comings and goings of these carriers of disease. Consequently it is to him that we must look for the close follow-up work which alone can make this system a success, for success it is proving to be; and the physician can make it a bigger success and a greater boon to humanity by following up every case which comes to his attention until he is satisfied that it is no longer a source of danger to the community.

Physicians are urged to keep in close touch with the State Department of Health, notifying them immediately when in their judgment a patient is not continuing treatment in competent hands. There is no need of waiting for the expiration of the six weeks of the original regulations; an additional regulation permits immediate report by name when advisable.

State-approved and subsidized clinics are being established in the following places. Those already in operation are marked with a star (*).

*Brockton, City Hospital.
*Corporation Hospital, Lowell.
*Lawrence.
Fitchburg.
*Worcester, City Hospital.
Springfield.
Holyoke.
*Pittsfield.
*Fall River.
Attleboro.
New Bedford.
*Lynn Hospital.
Boston:
  *Massachusetts General Hospital.
  *The Boston Dispensary.
  *Massachusetts Homœopathic Hospital.
  *Boston City Hospital.

All these clinics are being supplied with free arsphenamine, manufactured by this Department, and in all treatment may be had free (when conditions warrant it) for syphilis and gonorrhœa in both sexes. Evening pay clinics will be available in many cities. Hence, we are urging the support of these clinics as a measure of health conservation and as a patriotic service to army and navy.

The value attached to this work by the War Department may be estimated by the fact that the chief of the Subdivision of Venereal Diseases is a major of the Medical Corps, detailed to us by the War Department for the purpose of organizing this drive, not alone in this State, but throughout New England.

It may be of interest to note the standards accepted by the United States Public Health Service for the discharge of venereal patients from the government clinics now established in extra-cantonment zones throughout the country. The basis for discharge of cases of syphilis is as follows: —

> No case should be considered as cured for at least one year after the termination of treatment and unless the following conditions have been satisfied: (*a*) No treatment for one year, during which time there has been no symptoms, no positive, and several negative Wassermann reactions. (*b*) A negative provocation Wassermann reaction. (*c*) A negative spinal fluid examination. (*d*) A complete negative physical examination, having special reference to the nervous and circulatory systems. (*e*) A luetin test may also be included.
>
> Before discharging male gonorrhœics the following requirements must be met: 1. Freedom from discharge. 2. Clear urine; no shreds. 3. The pus expressed from the urethra by prostatic massage must be negative for gonococci on four successive examinations at intervals of one week. 4. After dilation of the urethra by passage of a full-sized sound, the resulting inflammatory discharge must be negative for gonococci."

In the gonorrhœal infections of women, absence of urethral and vaginal discharge is considered essential before release, in addition to "two successive negative examinations for gonococci of secretions of the urethra, vagina and cervix, with an interval of forty-eight hours, and repeated on four successive weeks."

It is recognized by all that even this comparatively thorough examination does not determine freedom from infectiousness, but guarantees a reasonable degree of safety for the public health. The following figures indicate the degree to which the physicians of this State are meeting the new requirements. Those in a position to judge estimate that about 1 case in 5 is being reported. Boston, with approximately 20 per cent. of the total population of the State, is reporting 40 per cent. of the cases reported. This fact is to be taken with due consideration of the large field covered by the leading Boston clinics.

*Massachusetts Venereal Disease Reports.*

| | | |
|---|---|---|
| Total reported by number to Sept. 1, 1918, | | 7,160 |
| Syphilis, | 2,116 | |
| Gonorrhœa, | 5,044 | |
| Reported by name (because lapsing treatment), | | 736 |
| Of these there were reclaimed, | | 403 |
| Syphilis, | 141 | |
| Gonorrhœa, | 262 | |
| Of these there were lost, | | 162 |
| Syphilis (male, 18; female, 6), | 24 | |
| Gonorrhœa (male, 123; female, 15), | 138 | |

*Boston Reports.*

| | | |
|---|---|---|
| Total venereal diseases reported by number to Sept. 1, 1918, | | 3,182 |
| Syphilis, | 1,016 | |
| Gonorrhœa, | 2,166 | |
| Reported by name, | | 218 |
| Syphilis, | 43 | |
| Gonorrhœa, | 175 | |
| Of these there were reclaimed, | | 26 |
| Syphilis, | 6 | |
| Gonorrhœa, | 20 | |
| Of these there were lost, | | 124 |
| Syphilis, | 15 | |
| Gonorrhœa, | 109 | |

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF AUGUST, 1918.

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The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of August, 1918: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, | 467 | 69 | 191 | 57 | 150 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, | 288 | 80 | 208 | |
| *Typhoid fever (Widal test), | 194 | 64 | 117 | 13 |
| Typhoid fever (culture test), | 39 | 4 | 35 | |
| Malaria, | 10 | – | 10 | |
| Gonorrhœa, | 195 | 50 | 145 | |
| Miscellaneous, | 31 | 4 | 27 | |

Total number of examinations made, 1,224.

# RÉSUMÉ OF COMMUNICABLE DISEASES FOR AUGUST, 1918.

## General Prevalence.

During the month of August, 4,315 cases of communicable diseases were reported as compared with 6,253 for July and 3,160 for August, 1917. The case rates per 100,000 population were, respectively, 110 for August, 1918, 159.5 for July, and 82 for August, 1917. The increase of cases for August, 1918, over the cases for the same month last year is accounted for by the reporting of venereal diseases, which were not reportable last year. A marked decrease in the number of cases for August was evidenced in all forms except typhoid fever, which showed an increase over July of 76 cases; lobar pneumonia, with an increase of 30 cases; gonorrhœa, with an increase of 78; and syphilis increased by 75 cases.

*Diphtheria.* — Diphtheria was widely scattered throughout the State, and was reported n 337 cases, a decrease of 116 cases over the preceding month.

*Measles.* — This condition showed a marked decrease in number of cases reported, the total being 500 as compared with 1,962 cases in July a decrease of 1,462 cases.

*Lobar Pneumonia.* — The total number of cases for the month was 170 All but 60 of these cases were reported from Camp Devens.

*Scarlet Fever.* — This disease was reported in 123 cases a decrease from July of 77 cases. Its incidence was widely distributed throughout the State, with no outbreaks.

*Typhoid Fever.* — Typhoid fever showed an increase of 76 cases for August over the preceding month, the total number reported being 188. In August, 1917, 246 cases were reported. The incidence was well distributed, with but few cities or towns exceeding their endemic index.

*Malaria.* — This disease was reported from Uxbridge in 21 cases. This does not mean, however, that there has been an unusual amount there, but that in this instance the reporting is being more conscientiously followed out It would seem from the few cases of malaria reported each year that physicians are not fully aware of their obligation to report their cases. It is just as necessary to report malaria as to report diphtheria or typhoid, and it is particularly essential at this time, when the movement of the men in national service is bringing so many carriers from malarial-infected regions to our community. Laboratory examination for the plasmodium of malaria is considered absolutely essential for the proper diagnosis and treatment from a public health viewpoint, and the State Bacteriological Laboratory is desirous of receiving specimens for examination.

*Whooping Cough.* — Whooping cough shows a slight decrease in number of cases for the month, but the incidence is, however, still in excess of what is to be desired. August cases numbered 688, while in July 781 cases were reported.

## OUTBREAKS.

A mild outbreak of typhoid fever, with 18 cases, occurred, which proved upon investigation to have its origin in the water used in washing milk utensils. This water was obtained from a spring which was draining a privy situated some 50 yards away. In the house there had been a case of typhoid fever, and the excreta was emptied into this privy.

Another small outbreak of 7 cases of typhoid was found on one man's milk route. It was determined that the woman who washed the milk bottles had a positive laboratory test, and seems to be an intermittent carrier.

An outbreak of influenza which appeared first among the naval forces located at Commonwealth Pier has assumed epidemic proportions. It has also spread to the civilian communities, and, as it seems to be particularly infectious, unless due care is taken to prevent exposure, we are in danger of a widespread epidemic. Bronchopneumonia is seen as a sequela, and is proving fatal in some instances. This Department recommends that grippe should not be treated too lightly, that a good physician be consulted and that return to work be delayed until full recovery is assured. The incubation period seems to be from a few hours to two or three days.

## RARE DISEASES.

*Anterior poliomyelitis* was reported from Winthrop, 1; Belmont, 1; Dedham, 2; Holyoke, 2; Springfield, 2; New Bedford, 5; Sterling, 1; Boston, 1; Hopedale, 2; Northampton, 1; Whately, 1; Cambridge, 1; total, 20.

*Anthrax* was reported from Peabody, 1 case.

*Dog bite requiring antirabic treatment* was reported from North Attleborough, 2.

*Dysentery* was reported from Melrose, 3; Newburyport, 1; Somerville, 1; Medfield, 2; Ipswich, 2; Boston, 2; Essex, 2; Dartmouth, 6; Pelham, 1; total, 20.

*Epidemic cerebrospinal meningitis* was reported from Boston, 3; Worcester, 1; Lynn, 3; Brockton, 1; Cambridge, 1; Springfield, 1; Newburyport, 1; Wakefield, 1; Spencer, 1; Bridgewater, 2; Winchester, 1; Camp Devens, 1; Westfield, 1; total, 18.

*Malaria* was reported from Natick, 2; Dedham, 1; Camp Devens, 3; Uxbridge, 21; Boston, 3; Fall River, 1; total, 31.

*Pellagra* was reported from Leominster, 1; Lynn, 1; total, 2.

*Septic sore throat* was reported from Haverhill, 1; Boston, 1; total, 2.

*Tetanus* was reported from Brockton, 1; Plymouth, 1; total, 2.

*Trachoma* was reported from Boston, 11; Worcester, 1; Medford, 1; New Bedford, 1; Lawrence, 1; Haverhill, 1; Chelsea, 1; total, 17.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | July, 1918. | August, 1918. | August, 1917. |
|---|---|---|---|
| Total cases, . . . . . . | 6,253 | 4,315 | 3,160 |
| Case rate per 100,000 population, . . | 159.5 | 110.0 | 82.0 |

### *Certain Prevalent Diseases.*

| | July, 1918. | August, 1918. | August, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[1] |
|---|---|---|---|---|
| Diphtheria: — | | | | North Attleborough, (1) 5<br>Chelsea, . . . (5) 10<br>Wakefield, . . (1) 8<br>Somerville, . . (7) 12 |
| Total cases, . . . . . . | 453 | 337 | 590 | |
| Case rate per 100,000, . . . | 11.6 | 8.6 | 15.3 | |
| Lobar pneumonia: — | | | | |
| Total cases, . . . . . . | 140 | 170 | 57 | |
| Case rate per 100,000, . . . | 3.6 | 4.3 | 1.5 | |
| Measles: — | | | | Haverhill, . . (2) 17<br>Lawrence, . . (4) 12<br>Lowell, . . . (20) 40<br>Worcester, . . (9) 23<br>Leominster, . . (3) 15<br>Easthampton, . . (2) 26<br>Montague, . . (0) 19 |
| Total cases, . . . . . . | 1,962 | 500 | 380 | |
| Case rate per 100,000, . . . | 50.0 | 12.8 | 9.9 | |
| Scarlet fever: — | | | | Greenfield, . . (1) 5<br>Pittsfield, . . (4) 7 |
| Total cases, . . . . . . | 200 | 123 | 145 | |
| Case rate per 100,000, . . . | 5.1 | 3.1 | 3.8 | |
| Typhoid fever: — | | | | Gloucester, . . (2) 7<br>Marlborough, . . (1) 18<br>Athol, . . . (0) 3<br>Southbridge, . . (0) 7<br>Fall River, . . (22) 36 |
| Total cases, . . . . . . | 112 | 188 | 246 | |
| Case rate per 100,000, . . . | 2.9 | 4.8 | 6.4 | |

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[1] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

*Certain Prevalent Diseases* — Concluded.

| | July, 1918. | August, 1918. | August, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[1] |
|---|---|---|---|---|
| Whooping Cough: — | | | | New Bedford, (5) 18<br>Taunton, (2) 13<br>Cambridge, (12) 114<br>Quincy, (1) 18<br>Lawrence, (6) 20<br>Somerville, (4) 28<br>Waltham, (3) 24<br>Framingham, (2) 15<br>Newton, (5) 13 |
| Total cases, | 781 | 688 | 338 | |
| Case rate per 100,000, | 19.9 | 17.5 | 8.8 | |
| Tuberculosis, pulmonary: — | | | | |
| Total cases, | 620 | 613 | 693 | |
| Case rate per 100,000, | 15.8 | 15.6 | 18.0 | |
| Tuberculosis, other forms: — | | | | |
| Total cases, | 82 | 60 | 67 | |
| Case rate per 100,000, | 2.1 | 1.5 | 1.7 | |

## INTERSTATE RECIPROCAL NOTIFICATION IN AUGUST, 1918.

| Disease and Locality of Notification. | Health Authority referred to — | Why referred. |
|---|---|---|
| Tuberculosis; Camp Devens, | State Board of Health, Providence, R. I. | Discharged from Camp Devens to home in Newport, R. I. |
| Tuberculosis; Camp Devens, | State Department of Health, Harrisburg, Pa. | Discharged from Camp Devens to home in Pittsburg, Pa. |
| Tuberculosis; Westfield, | State Department of Health, Albany, N. Y. | Rejected by local exemption board to home in New York. |
| Tuberculosis; Camp Devens, | State Department of Health, Trenton, N. J. | Discharged from Camp Devens to home in East Orange, N. J. |
| Tuberculosis; Camp Devens, | State Board of Health, Concord, N. H. | Discharged from Camp Devens to home in Manchester, N. H. |
| Tuberculosis; Camp Devens, | State Board of Health, Augusta, Me. | Discharged from Camp Devens to home in Freeport, Me. |
| Tuberculosis; Camp Devens, | State Board of Health, Augusta, Me. | Discharged from Camp Devens to home in Lewiston, Me. |
| Tuberculosis; Melrose, | State Board of Health, Augusta, Me. | Rejected by local exemption board to home in Hebron, Me. |
| Tuberculosis; Camp Devens, | State Board of Health, Augusta, Me. | Discharged from Camp Devens to home in Burlington, Me. |
| Tuberculosis; Westfield, | State Board of Health, Hartford, Conn. | Rejected by local exemption board to home in Hartford, Conn. |
| Tuberculosis; Local Exemption Board No. 4. | State Board of Health, Hartford, Conn. | Rejected to home in New Haven, Conn. |

## OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES.

| Disease. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Aniline, | Mixer, | Chicopee Falls, | M | 30 | W |
| Aniline, | Chemical worker, | Lawrence, | M | 28 | W |
| Anthrax, | Yard labor, | Woburn, | M | 32 | W |
| Chlorine gas, | Beater helper, | Adams, | M | 48 | W |
| Lead poisoning, | Painter, | Cambridge, | M | 44 | W |

# CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, | 3,920,988 | 312 | 1 | 453 | 34 | 25 | 15 | 97 | – | 140 | 109 | 1,962 | 53 |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, | 793,471 | 80 | – | 174 | 14 | 5 | 6 | 17 | – | 12 | 34 | 364 | 13 |
| 4 | Cities, 150,000–200,000. | | | | | | | | | | | | | |
| 5 | Worcester, | 173,419 | 8 | – | 9 | – | – | – | – | – | 12 | 6 | 35 | 1 |
| 6 | Cities, 100,000–150,000. | *578,593* | *27* | – | *84* | *7* | *4* | *1* | *10* | – | *31* | *21* | *230* | *7* |
| 7 | Fall River, | 128,317 | 6 | – | 15 | 5 | 1 | – | 1 | – | 7 | 2 | 22 | 1 |
| 8 | New Bedford, | 117,855 | 3 | – | 6 | – | – | – | – | – | 5 | 2 | 4 | 1 |
| 9 | Springfield, | 111,983 | 6 | – | 15 | – | 2 | 1 | 3 | – | 17 | 9 | 37 | 1 |
| 10 | Cambridge, | 111,379 | 10 | – | 44 | 2 | 1 | – | 3 | – | 1 | 3 | 55 | 2 |
| 11 | Lowell, | 109,059 | 2 | – | 4 | – | – | – | 3 | – | 1 | 5 | 112 | 2 |
| 12 | Cities, 50,000–100,000. | *569,719* | *27* | – | *68* | *8* | *7* | *4* | *26* | – | *15* | *8* | *317* | *11* |
| 13 | Lynn, | 99,952 | 2 | – | 11 | 1 | – | – | 5 | – | 3 | 1 | 27 | – |
| 14 | Lawrence, | 93,060 | 1 | – | 9 | 1 | 2 | 2 | – | – | 1 | 1 | 106 | 9 |
| 15 | Somerville, | 93,026 | 4 | – | 16 | 1 | 2 | 1 | 1 | – | 2 | 2 | 17 | 1 |
| 16 | Brockton, | 65,746 | 4 | – | 1 | – | – | – | 7 | – | 4 | – | 20 | – |
| 17 | Holyoke, | 62,796 | 2 | – | 3 | – | – | – | – | – | – | 2 | 4 | – |
| 18 | Haverhill, | 52,873 | 5 | – | 4 | – | 1 | – | 13 | – | 2 | 1 | 102 | – |
| 19 | Malden, | 51,798 | 2 | – | 20 | 3 | – | – | – | – | 1 | 1 | 33 | 1 |
| 20 | Chelsea, | 50,468 | 7 | – | 4 | 2 | 2 | 1 | – | – | 2 | – | 8 | – |
| 21 | Cities and Towns, 25,000–50,000. | *487,764* | *43* | – | *28* | *3* | *2* | *3* | *14* | – | *15* | *7* | *291* | *8* |
| 22 | Quincy, | 45,827 | 3 | – | 2 | – | – | – | 1 | – | – | 1 | 10 | – |
| 23 | Newton, | 45,234 | 25 | – | 3 | 2 | – | – | 2 | – | 5 | 1 | 6 | 1 |
| 24 | Pittsfield, | 44,410 | 1 | – | 1 | – | – | – | 1 | – | 3 | 2 | 8 | – |
| 25 | Salem, | 41,082 | 6 | – | 2 | – | – | – | – | – | 3 | 1 | 20 | – |
| 26 | Fitchburg, | 40,830 | 3 | – | 1 | – | 1 | 1 | 1 | – | 1 | – | 125 | 7 |
| 27 | Everett, | 40,435 | – | – | 4 | – | – | – | – | – | – | 1 | 16 | – |
| 28 | Taunton, | 37,381 | 1 | – | 1 | – | – | – | – | – | – | 1 | 10 | – |
| 29 | Brookline, | 37,147 | 2 | – | 1 | – | – | – | – | – | 2 | – | 9 | – |
| 30 | Medford, | 35,230 | 1 | – | 2 | – | – | – | 3 | – | – | – | 35 | – |
| 31 | Chicopee, | 33,177 | 1 | – | 3 | 1 | – | – | – | – | – | – | 10 | – |
| 32 | Waltham, | 31,643 | – | – | 1 | – | 1 | 2 | 5 | – | – | – | 38 | – |
| 33 | Revere, | 29,643 | – | – | 3 | – | – | – | – | – | – | – | – | – |
| 34 | Beverly, | 25,725 | – | – | 4 | – | – | – | 1 | – | 1 | – | 4 | – |
| 35 | Cities and Towns, 10,000–25,000. | *575,996* | *75* | – | *42* | – | *4* | *1* | *14* | – | *21* | *14* | *278* | *4* |
| 36 | Gloucester, | 24,529 | – | – | – | – | – | – | – | – | – | 4 | 23 | 2 |
| 37 | Northampton, | 23,081 | 3 | – | – | – | – | – | 2 | – | 1 | – | 20 | – |
| 38 | North Adams, | 22,045 | – | – | – | – | 1 | 1 | – | – | – | – | 1 | – |
| 39 | Peabody, | 20,489 | 1 | – | 4 | – | – | – | – | – | 1 | 1 | 52 | – |
| 40 | Attleboro, | 19,933 | – | – | – | – | – | – | – | – | – | – | 5 | – |
| 41 | Westfield, | 19,929 | 1 | – | 2 | – | – | – | 1 | – | 1 | 1 | – | – |
| 42 | Watertown, | 18,851 | 1 | – | 1 | – | – | – | 1 | – | – | – | 7 | – |
| 43 | Framingham, | 17,728 | 3 | – | – | – | – | – | – | – | – | – | 3 | – |
| 44 | Leominster, | 17,688 | – | – | – | – | – | – | – | – | – | – | 8 | – |
| 45 | Melrose, | 17,627 | 2 | – | – | – | – | – | 2 | – | 1 | – | 8 | – |
| 46 | Gardner, | 17,451 | – | – | 4 | – | – | – | – | – | – | – | 7 | – |
| 47 | Arlington, | 17,264 | 1 | – | – | – | – | – | – | – | – | – | – | – |
| 48 | Woburn, | 17,116 | 1 | – | 1 | – | – | – | – | – | – | 1 | 2 | – |
| 49 | Marlborough, | 15,680 | 10 | – | – | – | – | – | 2 | – | – | – | 4 | – |
| 50 | Methuen, | 15,649 | – | – | – | – | – | – | – | – | – | – | 7 | 1 |
| 51 | Newburyport, | 15,542 | – | – | – | – | – | – | – | – | – | – | – | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH,[1] JULY, 1918.

| 38A Ophthalmia Neonatorum. | | 38B Suppurative Conjunctivitis. | | 75A Trachoma. | | 19C Mumps. | | 7 Scarlet Fever. | | 28-29 Tuberculosis, Pulmonary. | | 30-35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 38C Gonorrhœa. | | 37 Syphilis. | | 8 Whooping Cough. | | Line No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | |
| 132 | – | 32 | – | 8 | – | 190 | – | 200 | 3 | 620 | 369 | 82 | 58 | 112 | 11 | 704 | – | 257 | 25 | 781 | 49 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 57 | – | 20 | – | 6 | – | 29 | – | 40 | – | 217 | 70 | 31 | 19 | 10 | 3 | 321 | – | 169 | 4 | 179 | 14 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 15 | – | – | – | – | – | – | – | 7 | – | 23 | 18 | 3 | 3 | 3 | – | 47 | – | 4 | 4 | 5 | – | 5 |
| *25* | – | *7* | – | – | – | *23* | – | *22* | – | *116* | *77* | *17* | *11* | *34* | *3* | *106* | – | *26* | *2* | *168* | *8* | 6 |
| 9 | – | 2 | – | – | – | 3 | – | 6 | – | 28 | 18 | 3 | 2 | 20 | 1 | 31 | – | 5 | 1 | 28 | 4 | 7 |
| 7 | – | – | – | – | – | 3 | – | 2 | – | 38 | 21 | 4 | 2 | 6 | 1 | 12 | – | – | – | 23 | 1 | 8 |
| 7 | – | 1 | – | – | – | 16 | – | 4 | – | 19 | 7 | 3 | 3 | 4 | – | 30 | – | 9 | – | 42 | 2 | 9 |
| – | – | 4 | – | – | – | 1 | – | 3 | – | 14 | 19 | 4 | 1 | 3 | 1 | 21 | – | 10 | – | 72 | 1 | 10 |
| 2 | – | – | – | – | – | – | – | 7 | – | 17 | 12 | 3 | 3 | 1 | – | 12 | – | 2 | 1 | 3 | – | 11 |
| *18* | – | *3* | – | *1* | – | *8* | – | *37* | – | *62* | *48* | *7* | *5* | *13* | *2* | *73* | – | *19* | *4* | *92* | *10* | 12 |
| 2 | – | 1 | – | – | – | 1 | – | 6 | – | 13 | 10 | – | 3 | 2 | – | 9 | – | 3 | 1 | 12 | 1 | 13 |
| – | – | – | – | – | – | – | – | 2 | – | 6 | 9 | – | – | 2 | 1 | 9 | – | 2 | 2 | 11 | 4 | 14 |
| 1 | – | – | – | – | – | – | – | 3 | – | 13 | 8 | 1 | 1 | 2 | – | 7 | – | 5 | – | 20 | 3 | 15 |
| 9 | – | 1 | – | – | – | 4 | – | 12 | – | 3 | 3 | – | – | 2 | – | 6 | – | 3 | – | 13 | – | 16 |
| 1 | – | – | – | – | – | 1 | – | 1 | – | 4 | 4 | – | – | – | – | 6 | – | – | – | 2 | – | 17 |
| 1 | – | – | – | – | – | 2 | – | 4 | – | 10 | 4 | 2 | – | 2 | 1 | 15 | – | 1 | – | 3 | – | 18 |
| 1 | – | – | – | – | – | – | – | 3 | – | 4 | 4 | 3 | 1 | 1 | – | 13 | – | 3 | 1 | 18 | 1 | 19 |
| 3 | – | 1 | – | 1 | – | – | – | 6 | – | 9 | 6 | 1 | – | 2 | – | 8 | – | 2 | – | 13 | 1 | 20 |
| *8* | – | *2* | – | – | – | *19* | – | *20* | – | *68* | *33* | *6* | *6* | *9* | *2* | *44* | – | *8* | *1* | *101* | *5* | 21 |
| 1 | – | – | – | – | – | 5 | – | 3 | – | 4 | – | – | 1 | 1 | 1 | 4 | – | 1 | – | 18 | – | 22 |
| 1 | – | 1 | – | – | – | – | – | – | – | 5 | 5 | 2 | 1 | 1 | 1 | 1 | – | 1 | – | 25 | – | 23 |
| 2 | – | – | – | – | – | – | – | 3 | – | 7 | 5 | – | – | 2 | – | 1 | – | – | – | – | – | 24 |
| – | – | – | – | – | – | 3 | – | 3 | – | 4 | 2 | 1 | 1 | 1 | – | 1 | – | – | – | – | – | 25 |
| – | – | – | – | – | – | – | – | – | – | 10 | 3 | – | 1 | – | – | 7 | – | – | – | 5 | – | 26 |
| 3 | – | – | – | – | – | 1 | – | 3 | – | 6 | 2 | 1 | – | 1 | – | 7 | – | – | – | 10 | – | 27 |
| – | – | – | – | – | – | 1 | – | 1 | – | 12 | 5 | – | 1 | 2 | – | 3 | – | – | – | 22 | 2 | 28 |
| – | – | – | – | – | – | 7 | – | 3 | – | 2 | – | – | – | – | – | 1 | – | 1 | – | 3 | 1 | 29 |
| – | – | – | – | – | – | 1 | – | – | – | 3 | 4 | 1 | – | – | – | – | – | – | – | 3 | – | 30 |
| 1 | – | – | – | – | – | 1 | – | – | – | 4 | 3 | – | – | – | – | 3 | – | – | – | 2 | – | 31 |
| – | – | 1 | – | – | – | – | – | – | – | 4 | 1 | 1 | 1 | – | – | 2 | – | 2 | 1 | 8 | 1 | 32 |
| – | – | – | – | – | – | – | – | 2 | – | 4 | 2 | – | – | – | – | 5 | – | 3 | – | – | 1 | 33 |
| – | – | – | – | – | – | – | – | 2 | – | 3 | 1 | – | – | 1 | – | 9 | – | – | – | 5 | – | 34 |
| *7* | – | – | – | *1* | – | *26* | – | *30* | *1* | *67* | *38* | *7* | *8* | *10* | *1* | *54* | – | *12* | *6* | *79* | *8* | 35 |
| – | – | – | – | 1 | – | – | – | – | – | 5 | 1 | 2 | – | – | – | 1 | – | 1 | – | 1 | – | 36 |
| – | – | – | – | – | – | 1 | – | 1 | – | 3 | 2 | – | – | – | – | 1 | – | – | 5 | 4 | – | 37 |
| – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | 1 | – | – | – | – | – | – | – | 38 |
| 1 | – | – | – | – | – | – | – | 1 | – | 6 | 3 | 1 | – | – | – | 2 | – | – | – | 1 | – | 39 |
| – | – | – | – | – | – | – | – | – | – | 1 | 1 | 1 | – | 1 | – | 2 | – | – | – | 3 | 1 | 40 |
| 1 | – | – | – | – | – | 1 | – | 7 | 1 | – | 6 | – | – | – | – | 2 | – | – | – | – | 1 | 41 |
| – | – | – | – | – | – | 1 | – | 1 | – | 3 | 2 | – | – | 1 | – | 1 | – | – | – | 2 | – | 42 |
| 1 | – | – | – | – | – | – | – | – | – | – | – | 1 | 1 | 1 | – | 6 | – | – | – | 20 | – | 43 |
| – | – | – | – | – | – | – | – | – | – | 7 | 1 | – | – | – | – | 4 | – | – | – | 2 | 1 | 44 |
| 1 | – | – | – | – | – | – | – | – | – | 2 | – | – | 1 | 2 | – | 3 | – | – | – | 1 | 1 | 45 |
| – | – | – | – | – | – | – | – | 2 | – | 1 | 2 | 1 | 1 | – | – | – | – | 1 | – | 1 | – | 46 |
| – | – | – | – | – | – | – | – | – | – | 3 | 1 | – | 1 | – | – | 2 | – | – | – | – | – | 47 |
| – | – | – | – | – | – | 1 | – | 2 | – | 2 | 3 | – | 1 | – | – | 2 | – | – | – | – | 1 | 48 |
| – | – | – | – | – | – | 3 | – | 1 | – | 5 | 2 | – | – | – | – | 4 | – | – | – | – | – | 49 |
| – | – | – | – | – | – | – | – | 2 | – | 2 | – | – | 1 | – | – | – | – | – | – | – | – | 50 |
| – | – | – | – | – | – | 6 | – | – | – | – | – | 1 | 1 | – | – | – | – | – | – | 2 | – | 51 |

of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them for

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | CITIES AND TOWNS GROUPED IN ORDER OF POPULATION. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 15,255 | – | – | 1 | – | – | – | – | – | – | – | 3 | – |
| 53 | Weymouth, | 14,659 | – | – | 4 | – | – | – | – | – | 1 | **2** | – | – |
| 54 | Winthrop, | 14,443 | 13 | – | 3 | – | 1 | – | – | – | 4 | – | 1 | – |
| 55 | Milford, | 14,088 | – | – | – | – | 1 | – | – | – | 1 | – | – | – |
| 56 | Greenfield, | 14,028 | 21 | – | – | – | – | – | 2 | – | 1 | – | 1 | – |
| 57 | Wakefield, | 13,664 | – | – | 9 | – | – | – | – | – | 1 | – | 10 | – |
| 58 | Plymouth, | 13,430 | – | – | 9 | – | – | – | – | – | – | – | 1 | – |
| 59 | Adams, | 13,340 | – | – | – | – | – | – | – | – | 2 | **1** | – | – |
| 60 | Clinton, | 13,266 | – | – | – | – | – | – | – | – | 4 | – | 20 | – |
| 61 | Webster, | 13,242 | – | – | 1 | – | – | – | – | – | – | – | 19 | – |
| 62 | Norwood, | 12,879 | 2 | – | – | – | 1 | – | – | – | 1 | – | 16 | – |
| 63 | West Springfield, | 12,696 | 3 | – | 1 | – | – | – | – | – | – | **1** | – | – |
| 64 | Danvers, | 12,309 | – | – | – | – | – | – | – | – | 1 | – | – | – |
| 65 | Dedham, | 12,172 | 2 | – | – | – | – | – | – | – | – | – | 9 | – |
| 66 | Natick, | 11,924 | – | – | 2 | – | – | – | – | – | 1 | **1** | 34 | **1** |
| 67 | Saugus, | 11,625 | – | – | – | – | – | – | – | – | – | – | – | – |
| 68 | Easthampton, | 10,692 | – | – | – | – | – | – | – | – | – | – | 10 | – |
| 69 | Athol, | 10,582 | – | – | – | – | – | – | – | – | – | – | – | – |
| 70 | Bridgewater, | 10,468 | – | – | – | – | – | – | – | – | – | **1** | – | – |
| 71 | Winchester, | 10,451 | 10 | – | – | – | – | – | 2 | – | – | **1** | 1 | – |
| 72 | Braintree, | 10,162 | 1 | – | – | – | – | – | 2 | – | – | – | 4 | – |
| 73 | Palmer, | 10,019 | – | – | – | – | – | – | – | – | – | – | 2 | – |
| 74 | TOWNS, 5,000–10,000. | *346,607* | *22* | *1* | *28* | – | *2* | – | *12* | – | *7* | *8* | *182* | *2* |
| 75 | TOWNS, 2,500–5,000. | *182,889* | *9* | – | *6* | *2* | – | – | *1* | – | *1* | *3* | *93* | *1* |
| 76 | TOWNS UNDER 2,500. | *212,530* | *21* | – | *8* | – | – | – | *3* | – | *3* | *5* | *102* | *3* |
| 77 | STATE INFIRMARY, | – | – | – | *2* | – | – | – | – | – | *1* | – | *2* | *2* |
| 78 | CAMP DEVENS, | – | – | – | *4* | – | *1* | – | – | – | *22* | *3* | *68* | *1* |

In addition to the above there occurred 10 cases of anterior poliomyelitis, 1 in Beverly, 1 in Boston, 1
deaths, 1 in Beverly and 1 in Boston; 4 cases of anthrax, 1 in Brockton, 1 in Methuen and 2 in Woburn,
30 cases of dysentery, 1 in Adams, 3 in Boston, 1 in Cambridge, 1 in Danvers, 1 in Fall River, 2 in Green-
6 in Worcester, with 12 deaths, 1 in Amesbury, 1 in Boston, 1 in Fall River, 1 in Leominster, 1 in Medway,
cases of malaria, 3 in Blackstone, 4 in Boston, 3 in Camp Devens, 3 in Dedham, 2 in Fall River, and 1
in Boston; 4 cases of tetanus, 1 in Great Barrington, 1 in Peabody and 2 in Worcester, with 6 deaths, 1 in
Lynn, and 3 cases of septic sore throat, 1 in Beverly, 1 in Hudson, and 1 in Watertown, with 2 deaths, 1 in

to the Public Health — Concluded.

| 38A<br>Ophthalmia Neonatorum. | | 38B<br>Suppurative Conjunctivitis. | | 75A<br>Trachoma. | | 19C<br>Mumps. | | 7<br>Scarlet Fever. | | 28-29<br>Tuberculosis, Pulmonary. | | 30-35<br>Tuberculosis, Other Forms. | | 1<br>Typhoid Fever. | | 38C<br>Gonorrhœa. | | 37<br>Syphilis. | | 8<br>Whooping Cough. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| – | – | – | – | – | – | – | – | – | – | 2 | 2 | – | – | – | – | – | – | – | – | – | – | 52 |
| – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 53 |
| 1 | – | – | – | – | – | 1 | – | – | – | – | – | – | – | 1 | – | 2 | – | – | – | 3 | – | 54 |
| – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | 1 | 55 |
| – | – | – | – | – | – | 3 | – | – | – | – | – | – | 1 | 1 | – | – | – | – | – | 16 | – | 56 |
| – | – | – | – | – | – | 4 | – | 4 | – | 2 | – | – | – | – | – | – | – | 1 | – | 4 | 1 | 57 |
| – | – | – | – | – | – | – | – | 1 | – | 5 | 1 | – | – | – | – | 1 | – | – | – | 3 | – | 58 |
| – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 59 |
| – | – | – | – | – | – | – | – | – | – | 3 | – | – | – | 2 | 1 | – | – | – | – | – | – | 60 |
| 1 | – | – | – | – | – | – | – | – | – | 1 | 1 | – | – | – | – | 2 | – | – | – | – | – | 61 |
| – | – | – | – | – | – | 2 | – | – | – | – | 3 | – | – | – | – | 2 | – | – | – | – | – | 62 |
| 1 | – | – | – | – | – | – | – | 2 | – | 3 | – | – | – | – | – | – | – | – | – | 2 | 1 | 63 |
| – | – | – | – | – | – | 2 | – | 1 | – | 2 | 3 | – | – | – | – | – | – | 5 | – | – | – | 64 |
| – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 65 |
| – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | – | 5 | – | 4 | – | 7 | – | 66 |
| – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | 67 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 68 |
| – | – | – | – | – | – | – | – | 1 | – | 2 | 1 | – | – | – | – | 4 | – | – | – | 2 | – | 69 |
| – | – | – | – | – | – | – | – | – | – | 1 | 2 | – | – | – | – | 1 | – | – | – | – | – | 70 |
| – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 3 | – | 71 |
| – | – | – | – | – | – | 1 | – | 3 | – | – | 1 | – | – | – | – | 4 | – | – | – | 2 | – | 72 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 73 |
| *1* | – | – | – | – | – | *13* | – | *23* | *1* | *32* | *21* | *7* | *2* | *8* | – | *19* | – | *7* | – | *82* | *2* | 74 |
| *1* | – | – | – | – | – | *7* | – | *4* | *1* | *10* | *12* | – | *2* | *14* | – | *3* | – | *2* | *1* | *25* | *1* | 75 |
| – | – | – | – | – | – | *6* | – | *14* | – | *11* | *33* | *1* | *1* | *11* | – | *28* | – | *8* | – | *49* | *1* | 76 |
| – | – | – | – | – | – | – | – | – | – | *14* | *19* | *3* | – | – | – | *9* | – | *2* | *3* | *1* | – | 77 |
| – | – | – | – | – | – | *59* | – | *3* | – | – | – | – | *1* | – | – | – | – | – | – | – | – | 78 |

in Cambridge, 1 in Easthampton, 1 in Medford, 3 in New Bedford, 1 in Newton, and 1 in Warren, with 2 with 2 deaths, 1 in Brockton and 1 in Methuen; 1 case of dog bite (requiring antirabic treatment) in Clinton; field, 2 in Melrose, 2 in Middleborough, 2 in New Bedford, 4 in Shirley, 1 in Somerville, 1 in Sutton and 1 in Melrose, 1 in New Bedford, 1 in North Adams, 1 in Somerville, 2 in Springfield, 1 in Wakefield; 16 in Lynn; 1 case of pellagra in Everett, with 2 deaths, 1 in Fall River and 1 in Everett; 1 case of smallpox Clinton, 1 in East Bridgewater, 1 in Pittsfield, 1 in Springfield and 2 in Worcester; 1 case of trichinosis in Boston and 1 in Lynn.

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner of Health, Eugene R. Kelley, M.D.

### Public Health Council.

Eugene R. Kelley, M.D., *Chairman.*

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George C. Whipple, S.B.
David L. Edsall, M.D.
Joseph E. Lamoureux, M.D.
Wm. J. Gallivan, M.D.
John T. Wheelwright.

| | |
|---|---|
| Division of Administration, | —— —— |
| Division of Sanitary Engineering, | Director and Chief Engineer, X. H. Goodnough, C.E. |
| Division of Communicable Diseases, | Director. John S. Hitchcock, M.D. |
| Division of Water and Sewage Laboratories, | Director and Chemist, H. W. Clark. |
| Division of Biologic Laboratories, | Director and Pathologist, Milton J. Rosenau, M.D. |
| Division of Food and Drugs, | Director and Analyst, Hermann C. Lythgoe, S.B. |
| Division of Hygiene, | Director, Merrill E. Champion, M.D. |

### State District Health Officers.

| | |
|---|---|
| The Southeastern District, | Adam S. MacKnight, M.D., Fall River. |
| The Eastern District, | Russell B. Sprague, M.D., Boston. |
| The Northeastern District, | Lyman A. Jones, M.D., Swampscott. |
| The North Midland District, | Charles E. Simpson, M.D., Lowell. |
| The South Midland District, | William W. Walcott, M.D., Natick.[1]<br>Arthur A. Brown, M.D., Worcester. |
| The Wachusett District, | Francis A. Finnegan, M.D., Fitchburg. |
| The Connecticut Valley District, | George T. O'Donnell, M.D., Springfield. |
| The Berkshire District, | Howard A. Streeter, M.D., Pittsfield. |

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[1] Leave of absence, military service.

# THE
# COMMONHEALTH

Vol. 5, No. 11
November, 1918

## MONTHLY BULLETIN

MASSACHUSETTS
STATE DEPARTMENT OF HEALTH

EUGENE R. KELLEY, M.D., Commissioner

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Publication of this Document
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# THE CONTAGIOUS DISEASES AND THE CHILD CONSERVATION MOVEMENT.

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Of the death rate under five years, only about 10 per cent. is due to the combined effects of the common contagious diseases. As nearly 90 per cent. of the deaths of these diseases occur during the first ten years of life, efforts to reduce this portion of the child death rate is certainly worthy of consideration in a child conservation plan.

After the greater dangers of prenatal conditions, birth and the gastrointestinal and nutritional risks of early life, it would seem as though the contagious problem were simple. The sources of all these diseases are human sources; it must be easy to avoid such persons.

The ultimate success of any plan of diminishing these diseases depends on the education of both parent and child to a real understanding of the manner and methods of spread of contagion and the principles of personal cleanliness and asepsis. Success, therefore, is not to be easily secured, nor quickly, unless new facts and new measures of fighting these diseases are secured.

The need of co-operation, constant and continuous, of parent, doctor, health officer and hospital must be kept in mind. The battle cannot be fought at present by any one of these alone.

Let us briefly survey the public health measures available for fighting contagious diseases before turning to the specific diseases. These measures are (1) immunization, (2) isolation, (3) quarantine, (4) disinfection, (5) sanitation and hygiene.

## IMMUNIZATION.

Immunization is the only measure which has been effective in the control of highly contagious diseases. Because of difficulties of various kinds, the other measures are never completely effective. In smallpox and typhoid this measure is well exemplified. These diseases can be controlled. If we can secure, therefore, effective immunization for the others we may expect that public health officers will eliminate them.

In whooping cough the hoped-for immunization has not been certainly demonstrated.

In diphtheria the passive immunization is effective in the presence of epidemics, but its short duration limits its use to epidemics. It cannot therefore prevent the epidemic in practice, but can only be used to control it when it has appeared. Active immunization by mixtures of toxin and antitoxin has, however, given a much longer immunity. Proof of its effectiveness in the control of diphtheria is still lacking, but there is great hope that it may enable us to prevent diphtheria as well as it has been possible to prevent typhoid in any body of men.

## Isolation.

Isolation still remains the backbone of the preventive work in these diseases. It has never yet stopped an outbreak of highly contagious diseases as measles, smallpox or influenza. Without doubt isolation measures do prevent many such outbreaks, but once an epidemic is started isolation alone invariably fails to control it.

Its defects in practice are multiple: (1) it is not secured sufficiently early; (2) it is not complete and thorough; and (3) it is not sufficiently prolonged.

In measles and whooping cough it is rare, indeed, to have recognition which does not allow days of high contagiousness before isolation is secured. It is impossible in these diseases, and also in chicken pox, mumps and rubella, to stamp out the contagion from a family, school or asylum by isolation methods alone.

In scarlet fever and diphtheria, however, careful isolation of all suspected carriers, and the prompt recognition and isolation of the cases that develop, will usually allow, in competent hands, the stopping of an epidemic even without other measures.

In thoroughness particularly is there a defect in isolation. A large number of mild cases are not included. It is not at all a rare experience, when one case has applied to the hospital for isolation, to find another case, unrecognized, which has been going about for some time. Often the parents in these circumstances are loath to allow isolation of the primary case because he is not sick.

There are many difficulties of recognition which will be touched on later, but there is undoubtedly a gap in our public health efforts here. A careful, thorough survey in each reported case of the contacts will frequently bring to light other related cases; also, strange as it may seem, a follow-up of exposed cases, as in a family, will from time to time save a missed case.

The overlooked cases are especially important in diphtheria and scarlet fever. In measles, pertussis, rubella, etc., the whole contagious period is accompanied by signs or symptoms which are not usually difficult of observation, and therefore their avoidance is possible.

In scarlet fever and diphtheria, on the other hand, contagiousness may persist with the most trivial evidence for long periods, exposing persons without their having a suspicion of the fact.

In duration no difficulties need be encountered in measles, rubella and varicella, pertussis and mumps, the contagious periods being short and the limits easily determined; but in scarlet fever and diphtheria, etc., great care may be required to avoid too early release from isolation.

Much might be said of the technique of isolation; in fact, a whole book would be required to deal properly with the subject. There are a surprisingly large number of people who have no idea of the problem. They think that it is extraordinary if a contagious hospital cannot take a case in which there is a suspicion only of a contagious disease.

The methods of surgical asepsis are simple, indeed, compared to the technique of an isolation hospital. Even the most thorough equipment will allow breaks in asepsis unless the most unremitting, honest, thorough and thoughtful work is carried on by the personnel. The need of isolation is always urgent, and imperfect equipment and methods are useless and discreditable.

The essential of isolation technique is of course the destruction at its point of exit of the virus, or the prevention of its spread. As in all the contagious diseases (so called), except chicken pox and smallpox, the point of exit of the virus is the mouth and nose chiefly, efforts are directed to discharges and contamination from these sources.

These consist of catching the discharges so far as possible on paper or cloth which can be at once put into paper bags or other receptacles for later burning; of boiling at once on leaving the sick room all linen, as towels, pillow cases, handkerchiefs, etc., or of putting them into clean laundry bags to be boiled before the removal of the infected clothing; of boiling at once by putting into a clean kettle all dishes which are to leave the sick room; of care to avoid the contamination of the clothing of attendant by suitable gown or outside covering which can be removed; and of thorough washing of the hands of the attendant on leaving the infected zone.

Unless these are carried through with care, the disease may be spread beyond the barrier and then the precautions are useless. For example, the attendant may handle a badly infected doorknob after having completed the disinfection of her hands, and thus carry the infection direct to others; or the attendant may be careless in handling the patient so that infection is carried to her face or beneath her gown or otherwise so that it may be carried from the sick room. The chain is no stronger than its weakest link.

## QUARANTINE.

Quarantine was at one time a measure of importance in the control of contagious disease, but the complexity of modern social contact and the spread and range of locomotion have practically removed it as a weapon.

Without doubt it is the only method that is effective in the control of the more highly contagious diseases such as measles and influenza. The greatness of the problem usually prevents the use of this method except in times of nervous stress or hysteria, and then it is always incomplete, consisting in closing the schools or the churches, saloons, etc. Contact still goes on, however, and even if less free the epidemic goes through its complete course in a little longer time.

When one stops to consider the well-known fact that if quarantine could be effective for one month, so that there was no contact from family to family, measles could be eliminated entirely from the world, the impracticability of quarantine comes home to one.

In schools quarantine of the exposed family by exclusion from school has been used. Its value is uncertain, particularly because the quarantine does not extend beyond the school hours.

A form of quarantine is of great value in excluding from the handling of foods, especially dairy products, those who are known or suspected of having been in contact with scarlet fever, diphtheria and typhoid.

## DISINFECTION.

Disinfection has had marked fluctuation in the public confidence as a preventive measure. Terminal disinfection, *i.e.*, after the recovery of the patient, has a very low standing at present. Its fall from favor may be said to be due to three factors: (1) it was expensive, (2) it did not disinfect, and (3) it was not necessary.

The difficulties of disinfection in securing proper concentration, heat and moisture of the gas and its proper confinement are increased by the trouble in deciding how much of the premises should be treated. To thoroughly disinfect the average home would require knowledge of the laboratory expert. As the difficulties of practical disinfection have grown clearer, the non-essential of much of previous routine has become appreciated.

After measles, rubella, mumps and whooping cough no terminal disinfection is required, as in these diseases when the source, *i.e.*, the patient, has become harmless the organisms that have been deposited on his surroundings have died.

After diphtheria, scarlet fever, chicken pox, smallpox and tuberculosis the viability of the virus is such that harm may come from the surroundings of the patient.

But as appreciated and demonstrated by Chapin, no difference in the results are observed whether disinfection is done or not. The germicidal effect of sunlight and diffused light and drying no doubt are largely responsible for the harmlessness of many infected objects. A surprisingly small amount of virus is deposited about the room in these diseases, most of the organisms being restricted to objects that come in direct contact with the mucous membranes, as handkerchiefs, linens, dishes, etc.

Without doubt proper care of the sick room will serve to avoid any need of final disinfection. This includes, of course, the care of all objects on which secretions may be deposited.

This concurrent disinfection carried on by the attendants on cases of contagious diseases is one of the essentials of disinfection. In carrying out this important point the old ideas of burning disinfectants or deodorants in the patient's room must give way to the immediate and proper disinfection of the virus by methods previously indicated.

## SANITATION AND HYGIENE.

The influence of sanitation and hygiene on the incidence of contagious disease varies inversely with the contagiousness. For example, in measles, rubella and influenza no appreciable protection is given by the best of hygienic surroundings. In those diseases, in which more intimate contact is required for their dissemination, as diphtheria, scarlet fever, etc., hygiene may play a larger part.

No appreciable immunity may be claimed for those who live under such surroundings except so far as they may be protected from contact with the virus of disease. While hygiene has, then, no especial influence on immunity to infection, it may have some slight influence on the course and complications of the disease.

Let us take up the practical problems presented in each of several of these diseases.

Diphtheria properly stands first in importance, for the death toll of this disease is highest in this group, and that in spite of knowledge of prevention and cure that could well bring the mortality to zero.

The needs are clearly (1) an earlier recognition of the cases, (2) more effort to trace recognized cases, and (3) more widespread trial of active immunization.

No clinical fact is more constantly and strikingly shown than that delay in recognition is the cause of almost all the deaths. This delay is due chiefly to the mildness of the basic symptoms, so that the parent is misled until a serious stage is reached.

Failure to examine the throat and nose unless these are complained of is another important cause of the high death rate. The throats of children should be examined at any sign of illness whatever.

Not a few deaths have been due to previous mild cases in the family which were not recognized and therefore not guarded against. Careful cultures should be taken from every case of infected throat. Diphtheria in one child may take on a mild tonsillar form rapidly clearing spontaneously, while the next case may be a rapidly developing virulent case. The diagnosis of tonsillitis even in the most typical cases should always be controlled by cultures.

There have been repeated deaths from severe diphtheria, taking the peritonsillar or phlegmonous form. It should never be forgotten that peritonsillar abscess may be most closely simulated by diphtheria, and in these cases failure to recognize within two days may mean certain death.

The occasional occurrence of true diphtheria in the middle ear should be kept in mind, as cases with aural discharge have at times caused epidemics. Particularly in the laryngeal form, with its mortality of from 20 to 30 per cent., is early recognition important.

There are many infections besides diphtheria which involve the larynx and produce the same signs, *i.e.*, croupy cough and hoarseness, stridor and finally dyspnœa. It is often very difficult to distinguish at once between these infections, and it requires instruments and examinations not in the reach of the average physician. If delay occurs while observation is carried on, a fatal degree may be reached.

In any case presenting these signs, therefore, it is the part of wisdom to give antitoxin unless diphtheria has been certainly excluded. The sudden disappearance, and less certainly the sudden appearance, of laryngeal signs of marked degree may be accepted as evidence of spasmodic croup, but in most cases exclusion is possible only by laryngeal examination with a speculum and a culture taken direct from the larynx.

Search for the source of each recognized case will often detect missed cases. It is not difficult to examine those who have been in contact, at least in the home, or among the playmates in the neighborhood, looking for nasal discharge or aural discharge or red throat or history of illness. Cultures from such contact should be taken whenever a case occurs. It may be well to remember the occasional case of diphtheria infection of wounds especially about the hands and face.

I should like to see a thorough, careful plan of intensive diphtheria work tried out in some section of a city as a demonstration of what can be done in diphtheria.

Such a plan would require, first, some education and interesting the people in the problem. They must be taught that in diphtheria the signs of illness are often slight and misleading; that any listlessness or headache, vomiting, loss of appetite, swelling in the neck, feverishness or any slight ill health should lead to a careful medical examination. This would necessitate co-operation of schools, school associations, press, social organizations, lectures, etc.

Second, some center or centers to which parents could bring their children with these mild signs for examination would be needed. These health centers could thus be a direct aid and also a means of continual education.

Third, a careful, tactful, thorough study of each reported case, to determine if possible its source and prevent other cases, would be a requisite.

Last, the use as rapidly as possible of toxin-antitoxin mixtures to immunize the people in general would be desirable. The Schick test should be read to determine those who are susceptible and who would require immunization.

Scarlet fever is not at present a large factor in the death rate. The most favorable point of attack would seem to be a recognition of the missed cases and a better appreciation of what constitutes an evidence of contagiousness.

The recognition of missed cases would greatly reduce the spread of the disease. Every case of tonsillitis may be scarlet fever, and such cases should therefore have repeated and careful examination of the skin for a rash.

Many mild cases are very difficult of diagnosis, even when suspicion has been directed to them. Such cases should be as thoroughly isolated, and for as long a time, as though known to be scarlet fever. Hospitals should have available well-arranged isolation for just such cases.

The physician must emphasize the need of isolation in these cases, as the layman does not sufficiently appreciate the difficulty in diagnosis, and considers the lack of conclusive evidence sufficient to free the patient from further supervision. A more general knowledge of the evidences of contagiousness would aid also in the problem. The desquamating skin is in itself entirely unimportant, but discharges from any surface area, especially the nose, may carry contagion for many weeks. It does not matter whether these discharges antedated the scarlet fever or not.

Such conditions as rhinitis, otitis media, sinuses of neck or chest, etc., paronychia, boils, abrasions and pus infections have been known to be associated with contagiousness for many weeks. Although twenty weeks is the limit of contagiousness at present known, there is no reason to limit the danger to that period. It is not to be supposed that the presence of these conditions is always associated with contagiousness, but there is no certain way of determining the dangerous from the safe.

*Measles.* — Measles still remains the universal disease to which of every generation practically all must yield. As the contagious period is very short and there are no carriers, the virus dying very shortly after leaving the body, the spread of the disease is dependent on its rapid transmission by droplets and contact and the universal susceptibility.

There is at present no possible hope of any reduction in the number of cases as we have in diphtheria and scarlet fever. Neither have we any certain means of controlling the course of the disease as in diphtheria.

The high degree of contagiousness for two or three days before the rash and recognition of the disease adds to the difficulty of control. Much can often be done by quarantining exposed cases, but so often exposures occur without knowledge that this often fails.

Certainly, weak and delicate children, and those with tuberculosis or respiratory infections, should avoid exposure in every possible way, even at the expense of school and social development.

The chief efforts, however, in measles must be directed to proper management of the cases to reduce the pneumonia danger to a minimum. Thus, fresh air, light, well-ventilated rooms, sunshine, light diet, careful rest in bed until well over the acute stage should take the place of the dark-room management.

The fear of light on the eyes is without the slightest foundation, in fact. The real eye danger of corneal ulcer is more readily detected and treated in the light than the dark.

*Whooping Cough.* — Whooping cough presents almost the same problem as measles. There is, however, much more frequently immunity to the disease, and especially does immunity occur with age, which is not true in measles.

The difficulty of early recognition, the high contagiousness of this early unrecognized stage, and its spread by droplets are nearly identical with the situation in measles.

The great danger of pertussis is also pneumonia, as in measles. Prevention at present is as difficult, depending on avoidance of contact. Artificial immunity with vaccines has not yet been certainly demonstrated, the results of different observers being markedly different. There is a probability of various strains of the Bordet Gengou bacillus and that these variations may be as important as in the meningococcus or the pneumococcus. The use of the polyvalent vaccines should be continued and the results critically examined.

The contagious period is by far most marked at the early catarrhal stage, but my experience does not support the recently increasing view that it ceases with this stage. Avoidance of exposure is less difficult later, however, as the severe cough advertises it freely.

Isolation of patients through the whole course of the disease is particularly irksome. The practice of allowing cases on the street and in the yards with some marking arm band is sufficiently safe if properly carried out. The distance of effective droplet spread is usually under 6 feet.

It is obvious from any consideration of prevention that results cannot be expected to be wonderful in these diseases and the death rate markedly reduced.

In diphtheria alone there is clearly a possibility of intelligent and energetic use of our present facilities bringing down the mortality to a marked degree.

Education and improvement should go together in all of these, and a gain once made should not be relinquished.

## ENERGY PRODUCING FOODS.

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THE carbohydrates fulfill their mission as a food by furnishing the body with foodstuffs which yield heat and energy. These are obtained chiefly from two groups, — the starches and the sugars, — and are found almost wholly in the vegetable kingdom, with the exception of milk, which contains milk sugar in the form of lactose.

Our chief sources of starch are the potato and the many products made from various seeds and grains, such as cereals, macaroni, spaghetti, samp, hominy and breads of all kinds.

Sugar is given to us by the bees in the form of honey; is found in varying amounts in the fruits and berries and vegetables; is made from the juice of the sugar cane and the sugar beet, and from the sap of the maple tree. Sugar is also obtained in form of syrups made by the hydrolysis of starch; for example, glucose and corn syrup.

Chemists have divided these carbohydrates into three groups according to the complexity of their composition.

The first group is known as the monosaccharids, or simple sugars, and comprises glucose, or starch sugar, dextrose, or grape sugar, fructose, or fruit sugar, and invert sugar, of which honey is an example. These sugars are very quickly and easily digested, for they are ready for absorption as soon as they are in solution.

The second group is called the disaccharids, and is made up of sucrose, or cane sugar, lactose, or milk sugar, and maltose, the malt sugar made from grains. The changing by digestion from the first to the second group is a comparatively simple process, so much so that we can make the statement that all sugars are easily digested (if taken in proper amounts) and pass quickly into the blood.

The polysaccharids form the third group of carbohydrates, and include all the starches, — glycogen, the form in which surplus sugar is stored in the body after it has been digested, and cellulose.

Of this polysaccharid group only the first two — namely, starch and glycogen — can be utilized by the body as food. But the other members of this group, especially cellulose, are important. A diet for a normal individual wholly lacking cellulose would be entirely inadequate. Fortunately, cellulose is present in the ordinary mixed diet. It is the fibrous material found in vegetables, fruits and grains, and plays its part by giving bulk to the food residue and aiding its passage along the digestive tract. There is sometimes danger of refining the diet to such a degree as not to leave enough of this roughage, and constipation is the result. Agar-agar, a product made from seaweed, is a valuable remedy for constipation, especially during sickness. Irish moss, because of its mucilaginous and thickening properties, is often used to make blancmange, a dessert greatly relished by many people, but in itself without food value. It is also employed to make a bland, soothing drink to relieve irritable conditions of the throat.

Before starch can be utilized in the body it must be changed, first, into the second group of sugars, and then again into the first group, or simple sugars. For this reason the digestion of starchy food, while it is not difficult if the starch is thoroughly cooked, is not so rapid as the digestion of sugar.

All the carbohydrates, then, during the process of digestion, are changed to the simple sugars, and in this form are absorbed by the blood and used as a source of energy. Since, however, the amount of sugar that can circulate in the normal blood is limited, any surplus sugar is changed to glycogen and stored, to a certain amount, in the liver, and in the same form, in a very small amount, in the muscles. This reserve supply is continually drawn upon, changed back to a simple sugar and used up as energy, the amount drawn being constantly replaced.

Since the amount of sugar that can be stored in the liver is limited to less than 1 pound, if more is consumed daily than is needed as a source of energy, or can be taken care of in the liver, it is changed into fat and stored as such in the body. Thus we often find the well-fed, easy-going individual who does not exert any great muscular energy well cushioned with fat, and his nervous, energetic friend, who is always going at top speed, inclined to leanness. The latter not only exerts greater normal muscular activity, but also uses up a great deal of carbohydrate in the many unnecessary movements always made by the nervous person. As a result there is no surplus to be stored up as fat. While the above statement is very often true, it cannot, of course, be used as an explanation of all such cases.

Sugar is not only one of our best energy-producing foods (experiments having proved that about half an hour after it is consumed sugar is transformed into muscular energy), but it has also been found to be of great value in delaying fatigue.

These reasons, combined with the fact that it is a concentrated food and easy to transport, has long made it a valuable part of the dietary of those who are doing severe muscular work. Thus we find sweet chocolate a favorite food of the Swiss guide, lumbermen consuming large quantities of sweet foods, and soldiers better able to stand up under the strain of their strenuous life when sugar is given in addition to their regular diet.

Although sugar is a very valuable food it should not be taken in excess. The amount of cane sugar consumed in this country before the war was larger than in any other country, and was estimated to be about 2 pounds per person per week, or 198 teaspoons, and many people probably ate more than this amount if they partook freely of sweet drinks and candy in addition to their regular diet. Without question most people could get along with half as much and even less without detriment to their physical well-being. In fact, their health would probably be improved.

From 3 to 4 ounces, or 9 teaspoons, of sugar a day is more than sufficient to keep the body in good condition; and this does not need to be served in the form of cane sugar. At the present time foods rich in sugar, such as dried and fresh fruits and sweet vegetables, together with sugar in the form of honey and syrups of all kinds, should be substituted for cane sugar. This will release cane sugar, which is the most concentrated and convenient form in which it can be shipped, for transportation to our soldiers and our allies.

Sugar is a valuable food for children who are always using energy in one form or another, but great care should be exercised in supplying this sugar in proper form. If too highly sweetened foods are given to children they will soon show a distaste for the mild sweetness of milk, and will not be satisfied with the natural sweetness of fruits. Too much concentrated sugar will dull the appetite and lead to the refusal of more necessary foods, and will be an irritant to the digestive tract and cause indigestion.

The best sugars for children are those found in milk, fruits and sweet vegetables.

A word might well be said about candy. It is made up chiefly of sugars in various forms, and should be considered a food. It should not be consumed, as it often is, in large quantities between meals, just to satisfy the palate. In small amounts, however, it may be used as a dessert, but should not be given to children until after they are seven or eight years old.

As to the harmful effects of candy on teeth two things may be said: first, if it is nibbled constantly there is likely to be a residue of sugar in the mouth which will change to acid and decompose the enamel of the teeth; second, if sweets are taken in excess between meals the appetite will be so satiated that other foods, especially vegetables and milk, will be refused, and the teeth will be deprived of the mineral necessary for their growth. A great craving for sweets often indicates an insufficient diet or a perverted taste due to wrong food habits.

Since starch is changed into sugar before it is absorbed by the body, starchy food is physiologically equivalent to sugar. It is true that starch digests more slowly than the sugars, but this very fact makes it especially valuable by providing more continual nourishment for the system. For example, 4 tablespoons of honey will furnish us with the same amount of energy as one boiled potato, but we should feel hungry more quickly after the meal of honey because it is more concentrated and more quickly taken into the blood.

The starchy foods also are valuable because they have combined with them other essential foods. For example, in the 4 tablespoons or 100 calorie portion of honey we would find 1 per cent. of protein, no fat, and 99 per cent. of carbohydrate, as compared with the 100 calorie portion of potato (1 potato) containing 10 per cent. of protein, 1 per cent. of fat, and 90 per cent. of carbohydrate, with mineral matter and indigestible fibrous material. If, however, sugar is taken in the fruits and vegetables it is also combined with these other essential foods.

As has been said, too much concentrated sugar is irritating to the digestive tract and causes indigestion. Here, again, starch or sugar taken in fruits or vegetables has an advantage. Starch is not changed to sugar rapidly enough to cause any ill effects, and the sugar in the fruits and vegetables is not concentrated enough to be eaten in excess.

In order to get the full food value from the starchy foods they must be properly cooked. Each little starch grain is covered by a cell wall which must be broken open before the starch can be digested. This can be done only by a high temperature such as the boiling point of water, 212° F., or high heat in an oven. Pure starch (such as cornstarch used in cornstarch pudding, or flour used in making white sauce) cannot be completely cooked in less than twenty minutes or half an hour, while the starch in cereals is so surrounded with cellulose that three hours are often required for its thorough cooking.

Unless starch is thoroughly cooked it will not be completely digested; the money used in procuring the product and the time spent in its preparation will have been wasted, while the fundamental purpose, that of providing the body with material to carry on its functions, will have been defeated.

Too many starchy foods are sometimes served at one meal. For instance, we often find potatoes, macaroni and bread in the main course of a meal, followed by rice, cornstarch or bread pudding. Another illogical combination is the serving of sugar on cereals. We are then combining, unnecessarily, two carbohydrates. This is a matter of habit entirely. If cereals are thoroughly cooked a delicious flavor is developed which is often lost when sugar is added. For one who has formed the habit of eating sugar on cereals the addition of a few dates, raisins or figs makes a pleasing substitute.

The carbohydrate group includes, then, all the sugars and the starches, all of which are changed to the simple sugars before they are utilized by the body. Their function is that of yielding heat and energy to the body. This group also includes some seaweeds, which are valuable as a laxative, and cellulose, whose function is not to nourish but to give bulk to the food and thus aid digestion.

Sugar is more quickly digested than starch, and for this reason is a more valuable food to use in times of great physical exertion, and a necessary food in the dietary of the soldier. Starch, on the other hand, has the advantage of providing the system with more continuous nourishment, and should form the basic carbohydrate for the normal individual and for children.

The amount of carbohydrate required daily is governed by the amount of muscular energy exerted by the individual. Generally speaking, from one-fourth to one-sixth of the total calories should be furnished by the carbohydrates, and will be provided if three portions rich in sugar and at least nine rich in starch are served daily.

In thinking of sugar we must remember the following facts: —

1. That starch is an undigested sugar and is changed to sugar in the body.
2. That starchy foods must be thoroughly cooked if the starch is to be well digested.
3. That sugar can be adequately supplied without using cane sugar.
4. That sugar is found in the sweet vegetables, such as beets, carrots, parsnips, turnips, onions and sweet potatoes, the amount ranging from 4 to 10 per cent.
5. That sugar is found in all fruits, the amount ranging from 10 to 20 per cent., and that the dried fruits are especially rich in sugar.
6. That honey, molasses, syrups of all kinds and maple sugar can be substituted in place of cane sugar to give a sweet flavor to food.
7. That children should not be given highly sweetened food nor candy.
8. That milk contains sugar, and that milk sugar is the sugar nature intended for infants.
9. That most people eat more sugar than they need, and that the sugar-eating habit is easily formed and hard to break.
10. That the candy-eating habit is one of self-indulgence, and often leads to Bright's disease or serious stomach troubles.

*Approximate Amount of Sugar in Some Common Fruits.*

| NAME OF FRUITS. | Weight in Grams. | Weight in Ounces. | Amount of Sugar (Teaspoonfuls). |
|---|---|---|---|
| 1 large pear, | 173 | 5.4 | $4\frac{1}{2}$ |
| 1 large apple, | 103 | 3.6 | 3 |
| 1 large orange, | 270 | 9.4 | $\frac{3}{5}$ |
| 1 large cantaloupe, | 480 | 13.0 | 3 |
| 1 ordinary peach, | 94 | 3.0 | 3 |
| 1 ripe banana, | 100 | 3.5 | 6 |
| 1 pineapple (edible portion), | 226 | 8.0 | $4\frac{4}{5}$ |
| Grapes, | 136 | 4.8 | $3\frac{9}{10}$ |
| Dried fruits: — | | | |
| 1 large fig, | 31 | 1.1 | 5 |
| 3 large dates, | 28 | 1.0 | $4\frac{1}{2}$ |
| 3 large prunes, | 32 | 1.1 | 5 |
| Raisins, | 28 | 1.0 | $4\frac{4}{5}$ |

### CARBOHYDRATE FOODS.

*Foods which provide Starch.*[1]

- Breads.
- Crackers.
- Cakes.
- Cookies.
- Cereal breakfast foods.
- Macaroni and other pastes.
- Hominy.
- Samp.
- Rice.
- Potato.
- Sweet potato.
- Tapioca.
- Sago.
- Cornstarch.
- Starchy puddings.
- Bananas.

*Foods which provide Sugar.*

- Sugars of all kinds.
- Molasses.
- Syrups.
- Candies.
- Rich cakes.
- Dates.
- Raisins.
- Figs.
- Prunes.
- Dried apricots.
- Fresh fruits.
- Preserves.
- Jams.
- Jellies.
- Marmalades.
- Carrots.
- Beets.
- Turnips.
- Onions.
- Squash.
- Pumpkins.
- Sweet potatoes.
- Parsnips.

# THE WAR AGAINST VENEREAL DISEASE.

BY MARY R. LAKEMAN, M.D., EPIDEMIOLOGIST, SUBDIVISION OF VENEREAL DISEASE, MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

THE "drive" on venereal disease is "carrying on." Many States now support special divisions for the control of these diseases in connection with the State health departments, all in active co-operation with the program of the War Department.

At the outset of the war the problem of venereal disease control was recognized as the greatest single medical problem the country had to face. At that time the President with the Secretaries of War and Navy and the Surgeon-Generals of Army and Navy gave careful consideration to the subject, and inaugurated a vigorous campaign aimed at the solution of this one problem, — such a campaign as had never before been undertaken by any army in the history of the world. From that time to the present moment nothing has been allowed to interfere with the carrying out of that program, even though the sacrifices might be many and great, as indeed they have been.

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[1] All starch is changed to sugar during the process of digestion.

This time the object has been, not as heretofore, to minimize the amount of venereal disease by the regulation of prostitution, by prophylactic packets and similar means, all of which have proven of no avail in the attempt to control this great disease problem. The aim in this crusade has been to prevent disease by the simple means of avoiding exposure. Thus syphilis and gonorrhœa are placed on a plane with other infectious diseases, and are being handled in precisely similar ways, namely, by seeking out the source of infection; by the removal of conditions which lead to infection; and by securing the best known medical service as promptly as circumstances permit. By applying these simple principles of public health remarkable results have already been attained.

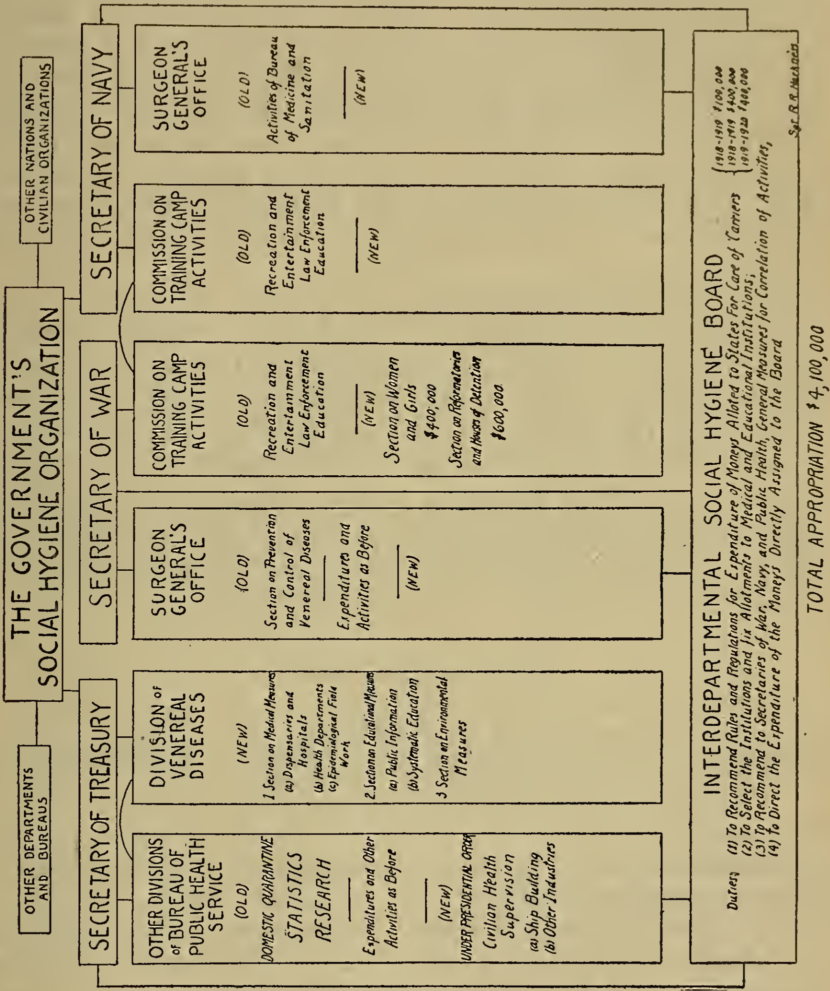
Boys in the Army and Navy are taught and are learning to believe that a life of continence is not only compatible with health, but that it is the *only* life that leads to the greatest vigor of mind and body. Furthermore, approximately 30,000 of the medical men of this country are coming under this influence along with the boys, and it is difficult to overestimate the far-reaching effect of this educational factor upon the future standards of society. The great task for physicians in civilian life is to bring the communities up to the standards which should be ready to meet these boys when they come back to their home towns.

The government has recently established a special Division for Venereal Diseases under the Secretary of the Treasury, as is shown by the accompanying chart. The work of this division with adequate financial support will greatly accelerate the progress made in the campaign.

The United States Public Health Service is co-operating closely with all State departments of health, in many of which a public health officer is placed in charge of venereal disease work.

Maj. Alec N. Thomson, who has become a vital factor in the Massachusetts campaign by his effective work in the State Subdivision of Venereal Diseases, has now become Military Director for New England, and will thus be in a position to keep all New England activities closely co-operating with the Surgeon-General's Office and with the Public Health Service, as well as with the various agencies of the Commission on Training Camp Activities. The position formerly occupied by Major Thomson in the State Department of Health is now filled by Lieut. J. J. Carroll of Holyoke as United States Public Health Officer.

The State of Massachusetts, through its increased financial aid from the Chamberlain-Kahn appropriation, has been able to enlarge its staff and thereby to lend substantial support to the educational feature of the campaign by the acquisition of the services of Dr. Lily Owens Burbank of East Bridgewater, who will be ready early next month to organize a far-reaching educational program among girls and women.


THE GOVERNMENT'S SOCIAL HYGIENE ORGANIZATION
OTHER NATIONS AND CIVILIAN ORGANIZATIONS
OTHER DEPARTMENTS AND BUREAUS
SECRETARY OF NAVY
SECRETARY OF WAR
SECRETARY OF TREASURY
SURGEON GENERAL'S OFFICE
(OLD)
Activities of Bureau of Medicine and Sanitation
(NEW)
COMMISSION ON TRAINING CAMP ACTIVITIES
(OLD)
Recreation and Entertainment Law Enforcement Education
(NEW)
COMMISSION ON TRAINING CAMP ACTIVITIES
(OLD)
Recreation and Entertainment Law Enforcement Education
(NEW)
Section on Women and Girls $400,000
Section on Reformatories and Houses of Detention $600,000
SURGEON GENERAL'S OFFICE
(OLD)
Section on Prevention and Control of Venereal Diseases
Expenditures and Activities as Before
(NEW)
DIVISION of VENEREAL DISEASES
(NEW)
1 Section on Medical Measures
(a) Dispensaries and Hospitals
(b) Health Departments
(c) Epidemiological Field Work
2 Section on Educational Measures
(a) Public Information
(b) Systematic Education
3 Section on Environmental Measures
OTHER DIVISIONS of BUREAU OF PUBLIC HEALTH SERVICE
(OLD)
DOMESTIC QUARANTINE
STATISTICS
RESEARCH
Expenditures and Other Activities as Before
(NEW)
UNDER PRESIDENTIAL ORDER
Civilian Health Supervision
(a) Ship Building
(b) Other Industries
INTERDEPARTMENTAL SOCIAL HYGIENE BOARD
Duties
(1) To Recommend Rules and Regulations for Expenditure of Moneys Alloted to States For Care of Carriers
(2) To Select the Institutions and fix Allotments to Medical and Educational Institutions;
(3) To Recommend to Secretaries of War, Navy, and Public Health, General Measures for Correlation of Activities,
(4) To Direct the Expenditure of the Moneys Directly Assigned to the Board
1918-1919 $100,000
1918-1919 $400,000
1919-1920 $400,000
TOTAL APPROPRIATION $4,100,000
Sgt. R. R. Hutchins

The State-approved clinics are being organized as rapidly as may be in the face of the great difficulty in securing suitable physicians for their staffs and in holding them from army service.

The laboratories of the State Health Department are prepared to examine without expense specimens of blood for Wassermann tests and smears for gonococcus. Containers for such specimens may be had on application to the laboratory, and reports will be returned as promptly as possible. All specimens for Wassermann work should be sent to the State Wassermann Laboratory, Harvard Medical School, Boston. Smears are examined at the State Bacteriological Laboratory, State House, Boston. Physicians are urged to make more general use of the State laboratory facilities. All questions regarding them will be gladly, and we trust satisfactorily, responded to by the State Department.

The State laboratories are also manufacturing arsphenamin, which has proven to be one of the best substitutes for Ehrlich's salvarsan. Arsphenamin is now being produced in sufficient quantities to supply the State-approved clinics and the State institutions with a fair degree of regularity to the extent of providing for their infectious cases of syphilis. Eventually this service can be extended to meet the requirements of private physicians as well. Meantime all cases which cannot afford regular fees may be referred to the State clinics, in which a carefully planned follow-up system ensures continuation of treatment until the case is "safe for the community."

## CANCER DECALOGUE.

PREPARED BY THE STANDING COMMITTEE ON THE CONTROL OF CANCER OF THE MASSACHUSETTS MEDICAL SOCIETY.

1. *The classical signs of cancer* are the signs of its incurable stages. Do not wait for the classical signs.

2. *Early Cancer causes no Pain.* — Its symptoms are not distinctive, but should arouse suspicion. Confirm or overthrow this suspicion immediately by a thorough examination, and, if necessary, by operation. The advice "Do not trouble that lump unless it troubles you" has cost countless lives.

3. *There is no Sharp Line between the Benign and the Malignant.* — Many benign new growths become malignant and should therefore be removed without delay. All specimens should be examined microscopically to confirm the clinical diagnosis.

4. *Precancerous Stage.* — Chronic irritation is a source of cancer. The site and the cause of any chronic irritation should be removed. All erosions, ulcerations and indurations of a chronic character should be *excised.* They are likely to become cancer.

5. *Early cancer* is usually curable by radical operation. The early operation is the effective one. Do not perform less radical operations on favorable cases than you do on unfavorable ones. The chances for a permanent cure are proportionate to the extent of the first operation. Make wide dissections; incision into cancer tissue in the wound defeats the object of the operation and leads to certain local recurrence.

6. *Late cancer* is incurable though not always unrelievable. Radium, X-rays, ligation, cautery or palliative operations may change distress to comfort and may even prolong life.

7. *Cancer of the Breast.* — All chronic lumps in the breast should be removed without delay. Benign tumors can be removed without mutilation. Examine all specimens microscopically. An *immediate* microscopical examination is desirable, since, if positive, it permits a radical operation at the same sitting. A radical operation performed ten days after an exploration is almost never successful in curing cancer of the breast.

8. *Cancer of the Uterus.* — Any irregular flowing demands thorough investigation. Offensive or even very slight serous flows are especially suspicious. Curette and examine microscopically. Amputate all eroded cervices which do not yield promptly to treatment. Do not wait for a positive diagnosis.

9. *Cancer of the digestive system* is difficult of early diagnosis and therefore unfavorable in prognosis. All persistent and recurring indigestions (more especially if attended by change of color and loss of weight), and any bleeding or offensive discharges, demand prompt and thorough investigation. Do not wait for a positive diagnosis.

10. *Cancer of the Skin.* — Any warts, moles or birthmarks which enlarge, change color or become irritated should be removed promptly. They are likely to become cancer. Do not wait for a positive diagnosis.

# VIOLATIONS OF THE MASSACHUSETTS COLD-STORAGE EGG LAW AND METHOD OF CONTROL EXERCISED BY THE STATE DEPARTMENT OF HEALTH.

By Hermann C. Lythgoe, Director, Division of Food and Drugs.

THE Massachusetts cold-storage egg law provides that the containers of all eggs which have been in cold storage and are offered or exposed for sale, must be labeled with the words "Cold Storage Eggs." Whenever such eggs are sold the package delivered to the customer must be labeled "Cold Storage Eggs." The character of the markings is such as shall be approved by the Commissioner of Health.

When one considers that the technical preparation of a case alleging a violation of this law involves the absolute proof that the eggs in question had been stored in a cold-storage warehouse, it is evident that the law can be violated with comparative ease by a person who may be sufficiently clever to conceal or destroy the necessary evidence under his control. Notwithstanding this difficulty, the inspectors of the Massachusetts State Department of Health have obtained evidence of violations of this law sufficient to secure numerous convictions. It was a well-known fact that this law was being frequently violated, and after some difficulty a procedure was evolved and put into operation, which has been very effective in curtailing, to some extent, the abuse of the character described.

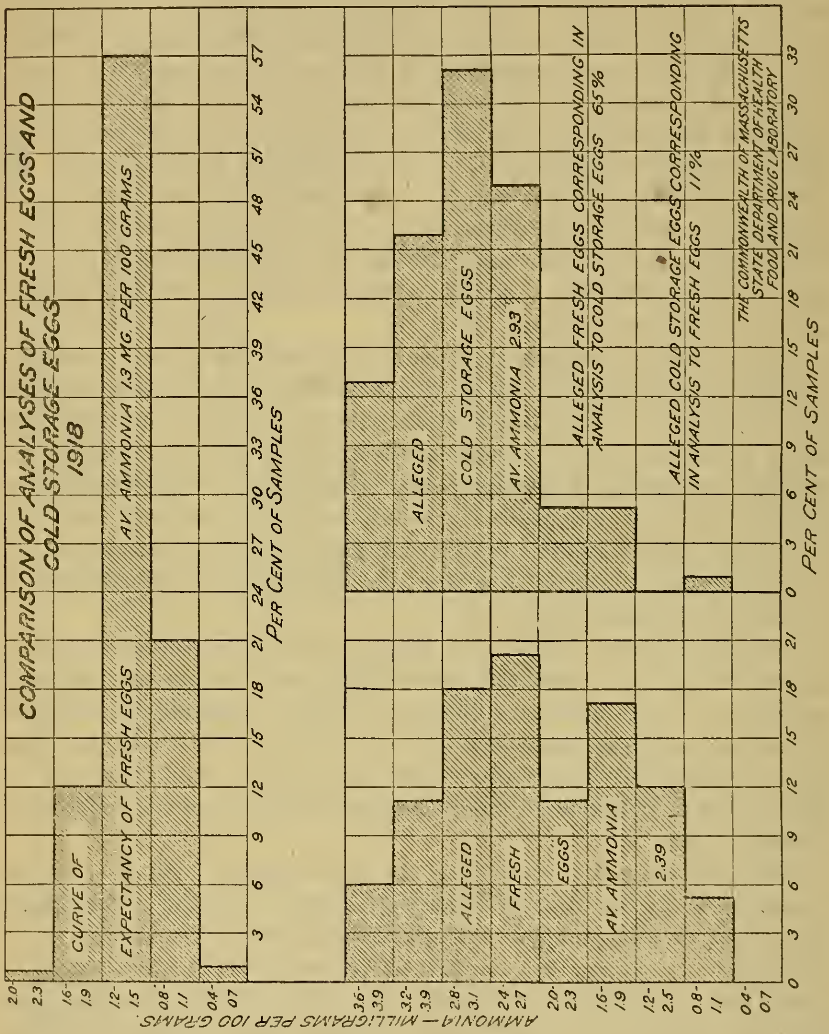
The State of Massachusetts a few years ago passed a law relative to false advertising, popularly known as the "blue sky law." This law, like most laws, possesses many remarkable properties not recognized at the time of its enactment, and the State Department of Health has used it successfully to control violations of our egg law. In order to prove a case for violation of this law it is necessary to show, first, that the advertising in question was false, and second, that the person making the advertisement either knew or could, upon reasonable investigation, have ascertained its falseness. The procedure is as follows: the inspector with a witness enters the store and asks the clerk for one dozen "fresh eggs," "strictly fresh eggs," "near-by hennery eggs," or eggs of some other variety, as per the signs in the store. He then delivers the eggs to the analyst, who examines them by the candling method, and thus separates the samples into fresh or old eggs, according to the size of the air cell. A person soon becomes proficient in this work, and can examine a large number of samples in a very short time. The segregated samples are then broken out (generally three eggs are used for this purpose), thoroughly mixed with an egg beater, and a determination of the ammonia content is made upon a 20-gram sample of the mixed material by the micro method of Folin. (See "Harrington's Practical Hygiene," fifth edition, page 95, or the Report of the Massachusetts State Board of Health, 1911, page 431, for a description of this method as applied to eggs.) It is an easy matter to distinguish between fresh and stale eggs by the ammonia content. The chemist who testifies in these cases must actually know the appearance of the air cell of a newly laid egg, and one, say, four weeks old, and he must also know by actual experimental work the ammonia content of newly laid eggs and the rate of increase in ammonia with age. If one can show that the eggs are at least a month old the court will usually be of the opinion that they are not entitled to be called "fresh."

Uncontradictory, expert evidence of the meaning of the word fresh is easily furnished by means of the dictionary. The question of possible deterioration by hot weather during transportation, or while being gathered by the farmer, which question will be raised by the defence, can usually be eliminated by collecting the samples during December, January and February, when the hot weather is not very prevalent. Furthermore, during that season the hens are not laying very extensively, and it is practically impossible for the defence to claim that the eggs can be fresh.

Strictly fresh eggs contain less than 1 milligram of ammonia per 100 grams of egg, but reasonably fresh eggs may contain as high as 2 milligrams of ammonia per 100 grams of egg. Naturally, these limits do not include eggs which are allowed to become rotten before being removed from the nests, which many egg dealers would have us believe is the usual, and, no doubt, proper procedure on the part of the average farmer.

Since the ammonia content of the egg increases with age, an egg ceases to be in the class of fresh eggs when it contains more than 2 milligrams of ammonia per 100 grams of egg, but it is entitled to be considered as an egg unqualified, or probably a "selected" egg, by which term the public understands the egg to be an unusually good egg, but which, to the dealer, and, in this respect, strange to say, his definition is correct, means any edible egg he may care to select. When the ammonia content exceeds 4 milligrams per 100 grams the egg passes into the class of decomposed eggs. Eggs of this latter class may also be considered "selected" eggs.

During December, 1917, and January and February, 1918, analyses were made in the Food and Drug Laboratory of the Massachusetts State Department of Health of 133 samples of eggs sold as fresh eggs, and of 100 samples of eggs sold as cold-storage eggs. These figures are exclusive of many examinations made by the candling method alone, and are also exclusive of those eggs in both classes that proved to be rotten. These analyses have been plotted, and the plots, together with the curve of expectancy of fresh eggs, are shown in the accompanying chart. The curve of expectancy of fresh eggs was com-



are exclusive of many examinations made by the candling method alone, and are also exclusive of those eggs in both classes that proved to be rotten. These analyses have been plotted, and the plots, together with the curve of expectancy of fresh eggs, are shown in the accompanying chart. The curve of expectancy of fresh eggs was computed from Prof. George C. Whipple's probability chart. A glance at the chart shows that there was not much difference in the quality of the alleged fresh eggs and the cold-storage eggs. Many of the cold-storage eggs were found to be of as good quality as fresh eggs of known authenticity. But still more remarkable is the large number of "fresh" eggs which are no better than the cold-storage product. The figures show that if one went to a retail store and asked for cold-storage eggs the chances of getting what were, to all intents and purposes, strictly fresh eggs were about 1 to 6. If, on the contrary, one asked for fresh eggs, his chances of getting eggs of the same quality as cold-storage eggs were about even.

Many of the so-called "fresh" eggs are known in the trade as "fresh western" eggs. Following in the trail of these eggs we find that they are gathered by the farmer, who, as soon as he has acquired a case full, ships them to his local broker. This naturally takes some time in the late fall months, owing to curtailment of production. The brokers ship in carload lots to the east, and when the eggs arrive they go to the storage houses of the local brokers and are kept above 45° F. until sold to the retailer. The retailer keeps the eggs above 45° F. until sold to the consumer. Thus, the eggs cannot be less than five weeks old, and probably are six and possibly eight weeks old, when they reach the consumer.

The significance of the cooling room above 45° F. is due to the cold-storage law, which makes such places cold storage warehouses if food is held there at or below 45° F. for thirty days or more. It may be incidentally mentioned that the cold-storage eggs are handled under better conditions, and the eggs are, on the average, better eggs.

The eggs laid in March, April and May, which constitute the bulk of cold-storage stock, are of exceptional keeping quality, and laid plentifully, and, naturally, are shipped and stored more quickly than those gathered later in the season. These are the eggs which are held for the winter trade. The eggs placed in cold storage during July, August and September are, as a rule, removed from storage before the spring eggs are touched.

The Department endeavored to obtain the services of egg brokers to testify in court relative to trade definitions regarding eggs, but the best it could obtain was the stereotyped definition that all eggs, not cold-storage eggs, were entitled to be called "fresh" eggs. We therefore used the dictionary for the establishment of a definition, and found it much more satisfactory and truthful.

By reason of an unwarranted prejudice against cold-storage food, the public prefers to pay an additional 25 per cent. for the purpose of fooling itself into the belief that it is not purchasing cold-storage eggs. This is well illustrated by the procedure of one dealer in Massachusetts who was purchasing only one quality of cold-storage eggs. He removed the eggs indiscriminately from the cases into various baskets, and placed different price marks upon them, such as 35 cents, 40 cents, 45 cents, 50 cents, 55 cents, 60 cents and 65 cents per dozen. He did this, he stated, to accommodate his customers, since many of them did not care to buy cheap eggs, but desired high-priced ones. He acknowledged the error of his ways before the judge of the district court, and paid the fine imposed. This was the most flagrant case upon which we could get the evidence. No doubt hundreds of such instances occur in this State.

During the early portion of this year the State Department of Health made 62 prosecutions, of which 60 convictions were secured. Thirty-six of these convictions were for the sale of cold-storage eggs not properly labeled; 13 were for the sale of old eggs as fresh eggs, in violation of the false advertising law; and 11 were for the sale of decomposed eggs. The two cases lost were for the sale of cold-storage eggs not properly labeled.

These abuses will continue until the public overcomes its unjust prejudice against cold-storage food. The public should understand that it is practically impossible to obtain fresh eggs during November, December, January and February unless one is on speaking terms with a large flock of hens. The public should also learn that the best and cheapest egg which can be obtained in the usual course of trade in that season is the cold-storage egg. Therefore, if one keeps no hens and has no intimate friends who keep hens, and one must rely upon the good wishes of the grocer, he should ask for cold-storage eggs when purchasing eggs during the winter months, and thus obtain good eggs at reasonable prices. The prejudice against such articles as glucose, oleomargarine and pasteurized milk has died out. It is to be hoped that the prejudice against the cold-storage eggs will soon follow.

## MASSACHUSETTS ANTI-TUBERCULOSIS LEAGUE SECURES NEW SECRETARY.

Mr. Robert V. Spencer has been secured to take charge of the work of the State Anti-Tuberculosis League, in the absence of Mr. Seymour H. Stone who is now serving on the Tuberculosis Commission in Italy.

Mr. Spencer is a Yale man, holds a master's degree from Columbia University, and has had extended experience as a public school teacher and administrator in New York and New Jersey. As a school man he has been active in health and community work, so that this field of public health work is not entirely new to him.

Mr. Spencer's entire time will be devoted to the work outside of Boston. He hopes during the year to travel extensively over the State, visiting tuberculosis organizations and institutions, stimulating interest in the inauguration of an extensive and intensive campaign. Mr. Spencer is now ready to assist local organizations in the solution of their particular problems through correspondence and by receiving calls at the office of the League, 3 Joy Street, Boston, from those interested in the work.

### Corrections.

In the September-October number of The Commonhealth, page 295, through an error, Major Thomson is credited with having written the article entitled "A Message to Physicians". The context should show that Major Thomson was not the author; it was written by Mary R. Lakeman, M.D., epidemiologist, Subdivision of Venereal Disease.

On page 248, line 20, of the same number, Director of Baby Hygiene Association should read "Superintendent of Nurses of Baby Hygiene Association."

THE COMMONHEALTH.

Monthly Bulletin of the Massachusetts State Department of Health.

*Sent Free to any Citizen of the State.*

Merrill E. Champion, M.D., Director of Division of Hygiene, Editor.
Room 546, State House, Boston, Mass.

*A Note of Thanks.* — Massachusetts has been going through a serious experience with influenza. We have had to call freely upon the generosity of other States both for medical and for nursing assistance. The response has been generous, and we wish to express our gratitude. An experience of this sort emphasizes the truth of the old adage that "a friend in need is a friend indeed."

*A Silver Lining to the Cloud.* — One good ought to come out of all the publicity given to influenza. People have had impressed upon them as never before the mode of transmission of certain diseases, and the responsibility of each individual for the health of his neighbor. The fact needs recognition that the man who is careless about sneezing and spitting is a bad citizen; it may be that the public generally will appreciate this better as a result of the demonstration of the present epidemic.

*Record of the Influenza Outbreak.* — The epidemic of influenza through which we are now passing has been so overwhelming that no summing up is at present feasible. In fact, owing to the strain under which most practicing physicians have been working, much valuable data undoubtedly have not been recorded at all. An attempt will be made, however, in a later issue of "The Commonhealth," to give the essentials of the outbreak as it affected Massachusetts.

*Vaccination against Influenza.* — At the beginning of the influenza outbreak vaccines prepared from strains of the influenza bacillus recovered from cases of the disease were put out by Dr. Leary, pathologist at the Tufts Medical School, Dr. Rosenau of this Department and others. In order to determine the value of such inoculation, both in prophylaxis and in treatment, the Commissioner of Health appointed two committees to study the question. The Board of Scientific Investigation was made up of Dr. M. J. Rosenau, chairman, professor of preventive medicine at Harvard Medical School; Dr. G. W. McCoy, director of the Federal Hygienic Laboratory, Washington, D. C.; and Maj. Frederick F. Gay of the United States Army. The Board of Statistical Investigation had for its members Mr. George C. Whipple, chairman, professor of sanitary engineering at Harvard University and Massachusetts Institute of Technology; Dr. Wm. H. Davis, chief statistician, Division of Vital Statistics, Bureau of the Census, United States Department of Commerce, Washington, D. C.; and Dr. F. C. Crum, statistician, Prudential Insurance Company.

After consideration of all available data, these boards reported October 7 to the Commissioner as follows: —

"We beg to submit the following recommendations: —

"That the State encourage the distribution of influenza vaccine intended for prophylactic use, but in such manner as will secure scientific evidence of the possible value of the agent. The use of such vaccine is to be regarded as experimental.

"That the State shall neither furnish nor endorse any vaccine at present in use for the treatment of influenza."

The individual reports of these two boards were these: —

The Special Board for Scientific Investigation, appointed to consider the evidence available on the prophylactic and therapeutic use of vaccines against influenza, has reached the following conclusions: —

"1. The evidence at hand affords no trustworthy basis for regarding prophylactic vaccination against influenza as of value in preventing the spread of the disease, or of reducing its severity. The evidence from the present epidemic, though meager, suggests that the incidence of the disease among the vaccinated is smaller than among the non-vaccinated. The Board, therefore, concludes that further experimental evidence should be collected.

"2. The evidence at hand convinces the Board that the vaccines we have considered have no specific value in the treatment of influenza.

"3. There is evidence that no unfavorable results have followed the use of the vaccines."

The following conclusions have been reached by the Special Board of Statistical Investigation: —

"1. The weight of such statistical evidence as we have been able to accumulate indicates that the use of the influenza vaccine which we have investigated is without therapeutic benefit. Exceptional cases where apparent benefit has resulted from the use of the vaccine can be matched by other cases where similar recoveries have been made without vaccination.

"2. The statistical evidence, as far as it goes, indicates a probability that the use of this influenza vaccine has some prophylactic value.

"3. There is also some evidence to the effect that other methods of protection, such as open-air treatment and the use of proper masks, are effective in protecting exposed attendants, and the use of vaccine should not be taken as an excuse for omitting such safeguards."

In accordance with these recommendations the influenza vaccine is being sent out to local boards of health and State institutions for an extensive trial, after which it is hoped some data will be available for an impartial scientific estimate as to the real value of a vaccine of Pfeiffer's bacillus, obtained from strains prevalent during an epidemic, in the prevention of the disease known as epidemic influenza.

*Future Plans for Child Conservation.* — Last month the Department presented a report of the previous year's work along the line of child welfare. The activities of the Child Conservation Committee were there set forth in detail.

It is felt strongly that the work begun last year should be followed up. Many towns are planning to initiate or to extend efforts in behalf of the health of the child. It is the duty of the State Department of Health to assist these enterprises in every possible way. For this purpose the services of trained public health nurses are necessary.

In view of these things it was agreed that the Child Conservation Committee, serving as an advisory body to the State Health Department, continue for another year, and that this committee pay the salary of three nurses to be "brigaded," so to speak, with the nurses maintained by the Department itself.

The State Department of Health is most anxious that the work temporarily interrupted by the epidemic be pushed forward as rapidly as practicable. Requests for information as to child welfare programs, literature, exhibits, moving pictures, stereopticon lectures, and so forth, should be made to the Director of the Division of Hygiene, State Department of Health, State House, Boston. A personal call is better than a letter, and a letter is far better than no interest at all.

*Revision of Mailing List.* — The editor of "The Commonhealth" is anxious to have a "live" mailing list. Paper and money are scarce these days, and none should be wasted. If you are interested enough in this bulletin to want to read it regularly, please answer the questions on the slip in the back of the bulletin. Sign your name and address, tear out the slip, and mail it to the Editor of the "Commonhealth," Room 545, State House, Boston, Mass.

*Certain Publications.* — Attention is called to certain pamphlets issued by this Department during 1918 which can be obtained on request: —

Food for Children from Two to Six Years Old.
Food and the Calorie.
Tissue Forming Foods.
Fats and their Value in the Diet.
Certain Dietary Essentials.
Care of the Child in Hot Weather.
Food Rules for School Children.
Food for the Child.
Venereal Disease.
Influenza Bulletin.

## NEW APPOINTMENTS.

The Department announces the following appointments: Dr. J. J. Carroll of Holyoke, acting assistant surgeon, United States Public Health Service, to be chief of the Subdivision of Venereal Disease, Massachusetts State Department of Health. Lieutenant Carroll succeeds Maj. Alec Nicol Thomson, who is now in charge of the work of correlating the efforts directed against venereal disease in the New England States in behalf both of the army and the United States Public Health Service.

Dr. Lily Owen Burbank of East Bridgewater to be director of Educational Work for Women, for the Subdivision of Venereal Diseases.

# ADDITIONAL REPORT OF RESULTS OF WEIGHING AND MEASURING TESTS OF BABIES.

SINCE the September–October number of "The Commonhealth" has been published, reports of the weighing and measuring test in Massachusetts have been received from 8 additional towns, thus making 137 towns which have carried out the test.

Below is a list of 15 cities and towns where the test was made and report not received, or where the test was not completed at the time of the printing of the last bulletin.

| City or Town and Estimated Population, 1918. | Number of Children tested. | Approximate Proportion of All under Five Years (Per Cent.). | Number below Average. | Plans for Follow-up Work. |
|---|---|---|---|---|
| Ashburnham, 2,027, . | 70 | 75 | 28 | One child put in hospital; many children under weight from whooping cough put on diet; committee to see that children advised to have adenoids removed have it done. |
| Bernardston, 822, . | 37 | –[1] | – | – – – |
| Cambridge, 111,379, . | 4,052 | 32⅗ | 470 | – – – |
| Easthampton, 10,692, . | 1,080 | 80 | 90 | Already have three district nurses; hope to have an occasional clinic. |
| Fall River, 128,317, . | 9,915 | 75 | 3,917 | Under supervision of district nurses. |
| Foxborough, 3,685, . | 110 | 66⅔ | 10 | Visiting nurse will follow up all cases that are under weight, and advise and instruct. |
| Granville, 787, . . | 29 | 90 | 23 | – – – |
| Holyoke, 62,796, . . | 3,380 | 77⅗ | 1,126[2] | Extension of present infant welfare work, with a new full-time prenatal nurse and the opening of preschool age clinics in congested sections. |
| Medford, 35,230, . . | 1,751 | – | –[3] | Health centers are planned for. Each captain to follow up cases. |
| Paxton, 506, . . | 54 | 75 | – | This work to be done by the Local Unit, Council of National Defense, with the assistance of the resident physician and the Child Welfare Committee. |
| Randolph, 5,013, . . | 231 | 100 | 175 | Note has been made of serious defects which will be attended to. Schools are instituting a system of organized, supervised play. |
| Stockbridge, 1,881, . | 120 | 97 | 6 | Visiting nurse takes care of some; operations performed as a result of the knowledge gained by examination. Appeal to parents. |
| Stoneham, 7,745, . . | 162 | 100 | – | Visiting nurse follows up cases as it seems necessary. |
| Warren, 4,319, . . | 155 | 95 | 5 | No definite plans. |
| Williamstown, 4,157, . | 244 | 50 | 24 | Funds have been raised for community nurse. |

[1] Full report not yet received. [2] Approximate. [3] Not over 100.

# REPORT OF DIVISION OF FOOD AND DRUGS.

During the months of August and September, 1918, samples were collected in 49 cities and towns.

There were 1,262 samples of milk examined, of which 374 were below the legal standard, 9 samples were skimmed milk not properly labeled, and 98 samples contained added water.

There were 194 samples of food examined, of which the following were adulterated: 1 sample of butter which was rancid; 4 samples of lobster, 15 samples of eggs, and 3 samples of fish, all of which were decomposed; 18 samples of sausage containing starch in excess of 2 per cent.; 7 samples of olive oil, all of which contained cottonseed oil; 1 sample of orangeade, submitted from Camp Devens, which contained benzoic acid; and 1 sample of vinegar low in acid.

There were 2 drugs examined, 1 sample being a proprietary drug which was misbranded.

The police departments submitted 15 samples of liquor and 20 samples of poisons for examination.

There were 33 convictions for violation of the laws, $1,400.10 in fines being imposed. William Tompkins of Marlborough, on three counts, Joseph E. Bauvielle of Swansea and Warren W. Seaver of Marlborough, on two counts each, Thrasybul Athanasiades, Manuel Darruda, both of Fall River, Henry M. Brown, Charles H. Hinckley, John Supple, all of Great Barrington, David H. Chandler of Duxbury, Angel Colocousis, John W. Connors, Michael Kelly, James McCue, James M. Spaulding, Arthur Viens, all of Salisbury, John Eichelser of Dalton, Frank LeBlanc of Rehoboth, Joseph Medeiros of Westport, Victor Pouts of Swansea, Frank A. Richardson of Stoneham, Louis Alberine of Ashland, George G. Gorman of North Attleborough, George W. Hastings of Kingston, Felix Ludovicz of Dighton, John C. Mello of Swansea, and Manuel D. Mello[1] of Little Compton, R. I., were convicted for violation of the milk laws. William Tompkins of Marlborough appealed his three cases, Joseph E. Bauvielle of Swansea appealed both of his cases, Frank LeBlanc of Rehoboth, George W. Hastings of Kingston and Felix Ludovicz of Dighton appealed their cases. Harry Lambert of Brighton, and William Condon and Hiram W. Babcock, both of Rockland, were convicted for violation of the slaughtering laws.

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[1] This case was prosecuted for this Department by Mr. Frank A. Jackson, Food and Drug Commissioner of Rhode Island.

There were 11 confiscations made, consisting of 80 pounds of tainted veal, 60 pounds of decomposed beef, 15 pounds of decomposed beef, 120 pounds of decomposed chickens, 16 pounds of decomposed turkeys, 75 pounds of tainted bologna, 53 pounds of tainted beef kidneys, 84 pounds of tuberculous pork, 100 pounds of tainted salami, 30 pounds of tainted salami, and 30 pounds of tainted sausages.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

Twelve samples of milk containing added water, produced by Victor Pouts of Swansea; 12 samples of milk containing added water, produced by Manuel D. Mello of Little Compton, R. I.; 12 samples of milk containing added water, produced by Thomas O. Morris of Waltham; 9 samples of milk containing added water, produced by Joseph E. Bauville of Swansea; 6 samples of milk containing added water, produced by David Chandler of Kingston; 5 samples of milk containing added water, produced by John Corriere Mello of Swansea; 2 samples of milk containing added water, produced by Eugene S. Ayer of Kingston; 4 samples of milk containing added water, produced by John Supple of Great Barrington; 2 samples of milk containing added water, produced by James M. Cormick of Chelmsford; 2 samples of milk containing added water, produced by Nelson Hyde of Monterey; 1 sample of milk containing added water, produced by John Eichelser of Dalton; 1 sample of milk containing added water, produced by Henry M. Brown of Great Barrington; 1 sample of milk containing added water, produced by Charles H. Hinckley of Great Barrington; 1 sample of milk containing added water, produced by John Sckiripo of Dracut; 4 samples of "Kilkis" brand olive oil containing cottonseed oil, put up by Moustis & Cotsis of Boston; and 2 samples of "Kilkis" brand olive oil containing cottonseed oil, put up by George Kobenakes of Boston.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of July, 1918: 1,313,608 dozens of case eggs, 278,972 pounds of broken-out eggs, 10,314,014 pounds of butter, 922,207 pounds of poultry, 662 pounds of game, 8,051,962 pounds of fresh meat and fresh meat products, and 7,127,278 pounds of fresh food fish.

There was on hand in storage on Aug. 1, 1918, 18,692,031 dozens of case eggs, 642,372 pounds of broken-out eggs, and 16,114,385 pounds of butter.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of August, 1918: 940,718 dozens of case eggs, 242,800 pounds of broken-out eggs, 5,505,407 pounds of butter, 799,038 pounds of poultry, 746 pounds of game, 9,713,360 pounds of fresh meat and fresh meat products, and 4,733,032 pounds of fresh food fish.

There was on hand in storage on Sept. 1, 1918, 17,757,681 dozens of case eggs, 569,701 pounds of broken-out eggs, and 18,876,072 pounds of butter.

## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF SEPTEMBER, 1918.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of September, 1918: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, . . . | 304 | 57 | 108 | 40 | 99 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, . . . . . | 231 | 59 | 172 | |
| *Typhoid fever (Widal test), . . | 334 | 104 | 214 | 16 |
| Typhoid fever (culture test), . . | 74 | 13 | 61 | |
| Malaria, . . . . . . . | 8 | – | 8 | |
| Gonorrhœa, . . . . . . | 142 | 28 | 114 | |
| Miscellaneous, . . . . . | 152 | – | – | |

Total number of examinations made, 1,245.

## Quarterly Report upon the Distribution of Biological Products and Diagnostic Outfits.

The following gives the total number of biological products and diagnostic outfits distributed by the State Department of Health during the three months ending Sept. 30, 1918: —

*Biological Products.*

| | |
|---|---|
| Diphtheria antitoxin: — | |
| 12,000 units (for the Boston City Hospital), | 785 bottles. |
| 12,000 units, | 48 bottles. |
| 6,000 units (for the Boston City Hospital), | 48 bottles. |
| 6,000 units, | 849 bottles. |
| 3,000 units, | 6,011 bottles. |
| 2,000 units (for the Boston City Hospital), | 48 bottles. |
| 1,000 units, | 1,932 bottles. |
| Smallpox vaccine: — | |
| Capillary tubes, | 87,518 |
| Bulk, | 1,900 |
| Typhoid vaccine: — | |
| Ampoules, | 3,225 |
| Bulk, | 2,400 |
| Typhoid-Paratyphoid vaccine: — | |
| Ampoules, | 4,358 |
| Bulk, | 5,250 |
| Paratyphoid vaccine: — | |
| Ampoules, | 622 |
| Antimeningitis serum, | 677 bottles. |
| Silver nitrate solution, | 13,326 ampoules. |

*Diagnostic Outfits.*

| | |
|---|---|
| Diphtheria culture tubes, | 1,711 |
| Tuberculosis sputum bottles, | 1,485 |
| Pneumonia outfits, | 132 |
| Widal outfits, | 901 |
| Typhoid culture outfits, | 211 |
| Malaria-Gonorrhœa outfits, | 282 |

## RÉSUMÉ OF COMMUNICABLE DISEASES FOR SEPTEMBER, 1918.

### General Prevalence.

The cases of communicable disease for September show an increase of more than 50 per cent. over those of the previous month, the total being 6,750 cases against a report of 4,307 cases for August. Over the corresponding month of last year there was an increase of 3,749 cases.

In both instances this is due largely to lobar pneumonia, which increased from 170 cases in August to 3,114 cases in September. In September, 1917, only 80 cases were reported. Of these 3,114 cases, 1,701 belonged to Camp Devens, and the remaining cases scattered throughout the State were the result of the epidemic of influenza, many of which subsequently developed pneumonia.

*Diphtheria.* — Four hundred and thirty-one cases of diphtheria were reported in September, an increase of about 100 cases over August, but a marked decrease over September of last year. The reports came, for the most part, from the larger cities and towns, and the increase was coincident with the opening of schools.

*Measles.* — As has been the case for several years, measles reached its minimum for the year in September; 263 cases were reported as compared with 500 cases for the previous month.

*Whooping Cough.* — Whooping cough which has been prevalent all the year also reached its minimum. As is the case with measles, by the average person whooping cough is not considered a serious disease. However, an average monthly total of 48 deaths thus far this year should be sufficient to impress people with the fact that there is a needless loss of life from this source.

*Typhoid Fever.* — Two hundred and sixty-one cases of typhoid fever were reported in September, — 3 less than the corresponding month last year, and the lowest number for September for the past five years. Several small outbreaks helped to swell this figure, in each case the infection being received through milk. The wife of a milk producer in Athol on whose route 6 cases occurred showed a positive Widal. An employee on a milk farm in Beverly who had had typhoid fever three years ago was responsible for 11 cases. A positive Widal was obtained from this man, and the milk supply was stopped. Twenty-three cases in Marlborough occurred on one milk route, the supply of which became infected through washing the milk utensils in a spring into which drained a privy of a household where there was a case of typhoid. With the exception of 33 cases reported from Fall River the remaining cases were scattered.

*Smallpox.* — Two cases of smallpox were reported during the month, one a soldier at Camp Devens, the other from West Springfield. The latter case worked as a farmhand in West Springfield for four or five days, leaving on September 17 for Windsor, Vt. All persons who had come in contact with this man were vaccinated, and the family kept under medical supervision.

## RARE DISEASES.

*Anterior poliomyelitis* was reported from Boston, 4; Braintree, 1; Brockton, 1; Cohasset, 1; Fairhaven, 1; Framingham, 1; Halifax, 1; Holyoke, 3; New Bedford, 3; Revere, 1; Shirley, 1; Somerville, 1; Whitman, 1; Worcester, 1; total, 21.

*Anthrax* was reported from Chicopee, 1; Haverhill, 1; Winchendon, 1; total, 3.

*Dog bite requiring anti-rabic treatment* was reported from Attleboro, 1; Lawrence, 1; total, 2.

*Dysentery* was reported from Beverly, 1; Boston, 1; Hamilton, 1; Medfield, 5; Melrose, 2; Somerville, 1; total, 11.

*Epidemic cerebrospinal meningitis* was reported from Boston, 9; Camp Devens, 1; Lawrence, 2; Lowell, 2; Lynn, 1; Newton, 1; Salem, 1; Springfield, 1; total, 18.

*Malaria* was reported from Camp Devens, 2; Uxbridge, 7; total, 9.

*Pellagra* was reported from Northampton, 1.

*Septic sore throat* was reported from Boston, 1; Salem, 1; total, 2.

*Smallpox* was reported from Camp Devens, 1; West Springfield, 1; total, 2.

*Trachoma* was reported from Boston, 2; Cambridge, 1; Chelsea, 1; Springfield, 1; Worcester, 1; total, 6.

*Tetanus* was reported from Beverly, 1; Cambridge, 1; Chesterfield, 1; Salem, 1; total, 4.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | August, 1918. | September, 1918. | September, 1917. |
|---|---|---|---|
| Total cases, | 4,307 | 6,751 | 3,001 |
| Case rate per 100,000 population, | 109.8 | 172.2 | 78.0 |

### *Certain Prevalent Diseases.*

| | August, 1918. | September, 1918. | September, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes.[1] |
|---|---|---|---|---|
| Diphtheria: — | | | | Danvers, (0) 10<br>Wakefield, (1) 5<br>Lowell, (16) 30<br>Somerville, (12) 20<br>Oxford, (0) 7 |
| Total cases, | 337 | 431 | 729 | |
| Case rate per 100,000 population, | 8.6 | 11.0 | 18.9 | |
| Lobar pneumonia: — | | | | |
| Total cases, | 170 | 3,114 | 80 | |
| Case rate per 100,000 population, | 4.3 | 79.4 | 2.0 | |
| Measles: — | | | | Fall River, (8) 33<br>Waltham, (2) 28<br>Leominster, (1) 17<br>Montague, (0) 22<br>Woburn, (0) 12 |
| Total cases, | 500 | 263 | 241 | |
| Case rate per 100,000 population, | 12.8 | 6.7 | 6.3 | |

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[1] Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for the more common communicable diseases. The numbers in parentheses after the names of each city and town indicate the endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

## *Certain Prevalent Diseases* — Concluded.

| | August, 1918. | September, 1918. | September, 1917. | Cities and Towns noticeably exceeding their Endemic Indexes. |
|---|---|---|---|---|
| Scarlet fever: — | | | | |
| Total cases, | 122 | 177 | 248 | |
| Case rate per 100,000 population, | 3.1 | 4.5 | 6.4 | |
| Typhoid fever: — | | | | Fall River, (32) 33<br>Walpole, (0) 5<br>Beverly, (2) 11<br>Marlborough, (1) 23<br>Southbridge, (1) 4<br>Athol, (0) 6 |
| Total cases, | 184 | 262 | 264 | |
| Case rate per 100,000 population, | 4.7 | 6.7 | 6.9 | |
| Whooping cough: — | | | | Attleboro, (0) 15<br>Fall River, (12) 34<br>New Bedford, (4) 33<br>Cambridge, (18) 100<br>Quincy, (0) 13<br>Waltham, (2) 18 |
| Total cases, | 688 | 543 | 261 | |
| Case rate per 100,000 population, | 17.5 | 13.9 | 6.8 | |
| Tuberculosis, pulmonary: — | | | | |
| Total cases, | 610 | 592 | 634 | |
| Case rate per 100,000 population, | 15.5 | 15.1 | 16.5 | |
| Tuberculosis, other forms: — | | | | |
| Total cases, | 58 | 49 | 57 | |
| Case rate per 100,000 population, | 1.5 | 1.2 | 1.5 | |

## OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES FOR THE MONTH OF SEPTEMBER, 1918.

| Disease. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Aniline, | Dyer, | Millbury, | M | 43 | W |
| Aniline, | Mixer, | Chicopee Falls, | M | 25 | W |
| Aniline, | Mixer, | Chicopee Falls, | M | 43 | W |
| Aniline, | Mixer, | Chicopee Falls, | M | 45 | W |
| Anthrax, | Picking hair, | Chicopee Falls, | M | 15 | W |

# CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Ep. Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, | 3,920,988 | 88 | – | 337 | **25** | 18 | **8** | 32 | – | 170 | **56** | 500 | **21** |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, | 793,471 | 29 | – | 124 | **9** | 3 | **1** | 2 | – | 15 | **14** | 96 | – |
| 4 | Cities, 150,000-200,000. | | | | | | | | | | | | | |
| 5 | Worcester, | 173,419 | 3 | – | 13 | **1** | 1 | **1** | – | – | 6 | **3** | 23 | **1** |
| 6 | Cities, 100,000-150,000. | *578,593* | *11* | – | *37* | *4* | *2* | *1* | *4* | – | *7* | *4* | *77* | *7* |
| 7 | Fall River, | 128,317 | 2 | – | 6 | **1** | – | – | 1 | – | 2 | **2** | 20 | **1** |
| 8 | New Bedford, | 117,855 | 2 | – | 2 | **1** | – | – | – | – | – | – | 4 | **1** |
| 9 | Springfield, | 111,983 | 4 | – | 9 | **1** | 1 | **1** | 1 | – | 4 | **1** | 6 | – |
| 10 | Cambridge, | 111,379 | 3 | – | 13 | – | 1 | – | 1 | – | 1 | **1** | 7 | – |
| 11 | Lowell, | 109,059 | – | – | 7 | **1** | – | – | 1 | – | – | – | 40 | **5** |
| 12 | Cities, 50,000-100,000. | *569,719* | *12* | – | *53* | *6* | *4* | *1* | *4* | – | *13* | *6* | *47* | *6* |
| 13 | Lynn, | 99,952 | – | – | 9 | – | 3 | – | 1 | – | 7 | **1** | 7 | **1** |
| 14 | Lawrence, | 93,060 | – | – | 3 | – | – | – | – | – | – | – | 12 | **5** |
| 15 | Somerville, | 93,026 | 1 | – | 12 | **1** | – | – | – | – | 2 | **2** | 1 | – |
| 16 | Brockton, | 65,746 | 1 | – | 4 | **1** | 1 | **1** | 3 | – | 2 | **1** | 4 | – |
| 17 | Holyoke, | 62,796 | 2 | – | 1 | – | – | – | – | – | – | **1** | 1 | – |
| 18 | Haverhill, | 52,873 | 5 | – | 7 | **1** | – | – | – | – | – | – | 17 | – |
| 19 | Malden, | 51,798 | 2 | – | 7 | **2** | – | – | – | – | 1 | **1** | 2 | – |
| 20 | Chelsea, | 50,468 | 1 | – | 10 | **1** | – | – | – | – | 1 | – | 3 | – |
| 21 | Cities and Towns, 25,000-50,000. | *487,764* | *15* | – | *26* | *2* | – | *1* | *6* | – | *6* | *8* | *44* | *3* |
| 22 | Quincy, | 45,827 | – | – | 3 | **1** | – | – | 2 | – | – | **1** | 2 | – |
| 23 | Newton, | 45,234 | 3 | – | 3 | **1** | – | – | – | – | – | **1** | – | – |
| 24 | Pittsfield, | 44,410 | – | – | 2 | – | – | – | – | – | 4 | **4** | – | – |
| 25 | Salem, | 41,082 | 2 | – | 4 | – | – | – | – | – | – | – | 1 | **1** |
| 26 | Fitchburg, | 40,830 | 1 | – | – | – | – | – | 1 | – | – | – | 18 | **2** |
| 27 | Everett, | 40,435 | – | – | 5 | – | – | **1** | 1 | – | – | – | – | – |
| 28 | Taunton, | 37,381 | – | – | 4 | – | – | – | – | – | 1 | **1** | 3 | – |
| 29 | Brookline, | 37,147 | 5 | – | – | – | – | – | 2 | – | 1 | – | 2 | – |
| 30 | Medford, | 35,230 | – | – | 3 | – | – | – | – | – | – | **1** | 5 | – |
| 31 | Chicopee, | 33,177 | – | – | 1 | – | – | – | – | – | – | – | 1 | – |
| 32 | Waltham, | 31,643 | 3 | – | 1 | – | – | – | – | – | – | – | 12 | – |
| 33 | Revere, | 29,643 | – | – | – | – | – | – | – | – | – | – | – | – |
| 34 | Beverly, | 25,725 | 1 | – | – | – | – | – | – | – | – | – | – | – |
| 35 | Cities and Towns, 10,000-25,000. | *575,996* | *12* | – | *40* | *2* | *6* | *2* | *3* | – | *9* | *3* | *83* | *1* |
| 36 | Gloucester, | 24,529 | – | – | 1 | – | – | – | – | – | 1 | **1** | 4 | – |
| 37 | Northampton, | 23,081 | – | – | 1 | **1** | – | – | – | – | – | – | 1 | – |
| 38 | North Adams, | 22,045 | – | – | – | – | – | – | – | – | – | – | – | – |
| 39 | Peabody, | 20,489 | – | – | 1 | – | – | – | – | – | 2 | – | 3 | – |
| 40 | Attleboro, | 19,933 | – | – | 1 | – | – | – | – | – | – | – | – | – |
| 41 | Westfield, | 19,929 | 1 | – | 1 | – | 1 | – | – | – | – | – | – | – |
| 42 | Watertown, | 18,851 | 1 | – | – | – | – | – | – | – | – | – | 2 | – |
| 43 | Framingham, | 17,728 | 1 | – | 2 | – | – | **1** | – | – | 1 | – | 2 | – |
| 44 | Leominster, | 17,688 | 2 | – | – | – | – | – | 1 | – | – | – | 15 | – |
| 45 | Melrose, | 17,627 | 1 | – | 4 | – | – | – | – | – | – | – | 1 | – |
| 46 | Gardner, | 17,451 | – | – | 2 | – | – | – | – | – | – | – | 2 | – |
| 47 | Arlington, | 17,264 | – | – | 3 | – | – | – | 1 | – | – | – | – | – |
| 48 | Woburn, | 17,116 | – | – | 1 | – | – | – | – | – | – | – | 2 | – |
| 49 | Marlborough, | 15,680 | – | – | – | – | – | – | – | – | – | – | – | – |
| 50 | Methuen, | 15,649 | – | – | – | – | – | – | – | – | – | **1** | 1 | – |
| 51 | Newburyport, | 15,542 | – | – | – | – | 1 | **1** | – | – | – | – | – | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary addition and correction, these deaths, while approximately correct, are not absolutely complete.

## TO THE PUBLIC HEALTH,[1] AUGUST, 1918.

| 38A Ophthalmia Neonatorum. | | 38B Suppurative Conjunctivitis. | | 75A Trachoma. | | 19C Mumps. | | 7 Scarlet Fever. | | 28-29 Tuberculosis, Pulmonary. | | 30-35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 38C Gonorrhœa. | | 37 Syphilis. | | 8 Whooping Cough. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| 119 | - | 23 | - | 17 | - | 71 | 1 | 122 | 3 | 609 | 334 | 58 | 59 | 184 | 17 | 667 | 4 | 248 | 15 | 688 | 51 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 39 | - | 10 | - | 11 | - | 27 | - | 26 | 1 | 211 | 89 | 23 | 18 | 16 | 1 | 293 | - | 136 | 2 | 149 | 16 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 7 | - | - | - | 1 | - | 1 | - | 6 | - | 24 | 14 | - | 2 | 7 | 2 | 42 | - | 26 | 1 | 5 | 2 | 5 |
| *31* | - | *7* | - | *1* | - | *4* | - | *18* | - | *100* | *58* | *10* | *11* | *62* | *6* | *99* | - | *27* | *2* | *222* | *15* | 6 |
| 9 | - | 1 | - | - | - | 1 | - | 5 | - | 24 | 14 | 2 | 3 | 36 | 1 | 21 | - | 7 | - | 68 | 4 | 7 |
| 9 | - | 2 | - | 1 | - | - | - | 1 | - | 29 | 13 | 4 | 2 | 11 | 3 | 22 | - | 5 | - | 18 | - | 8 |
| 4 | - | 2 | - | - | - | 2 | - | - | - | 14 | 6 | 1 | 2 | 8 | 1 | 31 | - | 5 | 1 | 19 | 6 | 9 |
| 2 | - | - | - | - | - | - | - | 5 | - | 21 | 15 | 2 | 2 | 4 | - | 17 | - | 9 | - | 114 | 3 | 10 |
| 7 | - | 2 | - | - | - | 1 | - | 7 | - | 12 | 10 | 1 | 2 | 2 | 1 | 8 | - | 1 | 1 | 3 | 2 | 11 |
| *22* | - | *4* | - | *3* | - | *7* | - | *9* | - | *61* | *29* | *8* | *7* | *18* | *2* | *54* | - | *14* | *4* | *97* | *9* | 12 |
| - | - | - | - | - | - | 1 | - | - | - | 12 | 3 | 2 | 2 | 3 | - | 11 | - | 4 | 2 | 6 | 3 | 13 |
| 1 | - | - | - | 1 | - | - | - | 1 | - | 7 | 9 | 3 | 2 | 4 | 1 | 2 | - | 4 | 1 | 20 | 2 | 14 |
| 2 | - | - | - | - | - | 2 | - | 1 | - | 9 | 3 | - | 1 | 1 | - | 8 | - | 2 | - | 28 | 1 | 15 |
| 8 | - | 1 | - | - | - | 1 | - | 4 | - | 13 | 3 | 1 | - | 4 | - | 9 | - | 4 | - | 25 | 1 | 16 |
| 1 | - | - | - | - | - | 1 | - | - | - | 3 | 4 | - | - | - | - | 6 | - | - | 1 | - | - | 17 |
| 3 | - | - | - | 1 | - | 2 | - | - | - | 8 | 4 | - | - | 1 | 1 | 8 | - | - | - | 3 | - | 18 |
| 2 | - | 2 | - | - | - | - | - | 1 | - | 3 | 2 | 1 | 1 | 2 | - | 4 | - | - | - | 5 | 1 | 19 |
| 5 | - | 1 | - | 1 | - | - | - | 2 | - | 6 | 1 | 1 | 1 | 3 | - | 6 | - | - | - | 10 | 1 | 20 |
| *7* | - | - | - | *1* | - | *8* | - | *20* | - | *61* | *38* | *5* | *3* | *9* | *2* | *49* | - | *13* | *3* | *77* | *4* | 21 |
| - | - | - | - | - | - | - | - | 1 | - | 5 | 1 | - | 1 | 1 | - | 2 | - | 2 | - | 18 | - | 22 |
| - | - | - | - | - | - | 4 | - | - | - | 4 | - | 1 | 1 | 1 | - | 3 | - | 1 | - | 13 | - | 23 |
| 2 | - | - | - | - | - | - | - | 7 | - | 7 | 3 | - | - | 1 | - | 7 | - | 4 | - | 3 | - | 24 |
| 1 | - | - | - | - | - | - | - | 2 | - | 4 | 8 | 1 | - | 2 | 1 | 6 | - | 1 | 1 | 1 | 1 | 25 |
| - | - | - | - | - | - | 1 | - | - | - | 6 | 5 | 3 | - | - | - | 5 | - | - | - | 2 | - | 26 |
| - | - | - | - | - | - | 1 | - | 4 | - | 6 | 2 | - | - | 2 | - | 2 | - | 2 | - | 2 | 1 | 27 |
| - | - | - | - | - | - | - | - | - | - | 7 | 6 | - | - | 1 | - | 3 | - | 2 | 2 | 13 | - | 28 |
| - | - | - | - | - | - | 2 | - | 1 | - | 3 | 2 | - | - | - | - | - | - | - | - | 1 | - | 29 |
| - | - | - | - | 1 | - | - | - | 1 | - | 3 | 2 | - | - | 1 | - | - | - | - | - | - | 2 | 30 |
| 1 | - | - | - | - | - | - | - | - | - | 7 | 4 | - | - | - | - | 1 | - | 1 | - | - | - | 31 |
| 1 | - | - | - | - | - | - | - | 1 | - | 3 | 3 | - | 1 | - | 1 | 6 | - | - | - | 24 | - | 32 |
| 1 | - | - | - | - | - | - | - | 2 | - | 4 | - | - | - | - | - | 12 | - | - | - | - | - | 33 |
| 1 | - | - | - | - | - | - | - | 1 | - | 2 | 2 | - | - | - | - | 2 | - | - | - | - | - | 34 |
| *6* | - | - | - | - | - | *6* | - | *20* | *1* | *82* | *43* | *10* | *9* | *48* | *1* | *55* | *4* | *8* | *1* | *65* | *7* | 35 |
| - | - | - | - | - | - | - | - | - | - | 14 | 2 | 4 | - | 7 | - | 5 | - | - | - | - | - | 36 |
| - | - | - | - | - | - | - | - | - | - | 3 | 5 | - | - | 1 | - | - | 4 | 1 | - | 1 | - | 37 |
| - | - | - | - | - | - | - | - | - | - | - | 3 | - | - | - | - | - | - | - | - | - | - | 38 |
| - | - | - | - | - | - | - | - | - | - | 4 | - | - | - | - | - | 5 | - | 1 | - | - | 1 | 39 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | - | - | 1 | 4 | 1 | 40 |
| - | - | - | - | - | - | 1 | - | 2 | - | - | 2 | 1 | - | 7 | - | - | - | - | - | 3 | - | 41 |
| - | - | - | - | - | - | - | - | 2 | - | 4 | - | - | - | - | - | 1 | - | - | - | - | - | 42 |
| - | - | - | - | - | - | - | - | - | - | 3 | 1 | - | - | 1 | - | 5 | - | 1 | - | 15 | 1 | 43 |
| - | - | - | - | - | - | - | - | - | - | 4 | 6 | - | 2 | - | - | 2 | - | 1 | - | 6 | - | 44 |
| - | - | - | - | - | - | - | - | - | - | 2 | - | - | - | - | - | 2 | - | - | - | 3 | - | 45 |
| - | - | - | - | - | - | - | - | 1 | 1 | 3 | 1 | - | - | 1 | - | - | - | - | - | - | 1 | 46 |
| - | - | - | - | - | - | - | - | - | - | 4 | 1 | - | - | - | - | - | - | - | - | 1 | - | 47 |
| - | - | - | - | - | - | - | - | 1 | - | - | 1 | - | - | 2 | - | 3 | - | - | - | 1 | - | 48 |
| - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 8 | - | - | - | - | - | - | - | 49 |
| 2 | - | - | - | - | - | - | - | 1 | - | 3 | 1 | - | 1 | 2 | - | 1 | - | - | - | 3 | - | 50 |
| 1 | - | - | - | - | - | 1 | - | - | - | 2 | 1 | - | 1 | 1 | - | - | - | - | - | - | - | 51 |

of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them for

## Cases and Deaths from Diseases Dangerous

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken Pox. |  | 9 Diphtheria. |  | 61A Ep. Cerebrospinal Meningitis. |  | 19B German Measles. |  | 92 Lobar Pneumonia. |  | 6 Measles. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 15,255 | – | – | – | – | – | – | – | – | – | – | – | – |
| 53 | Weymouth, | 14,659 | – | – | 1 | – | – | – | – | – | – | – | – | – |
| 54 | Winthrop, | 14,443 | 4 | – | – | – | – | – | – | – | 1 | – | 1 | – |
| 55 | Milford, | 14,088 | – | – | – | – | – | – | – | – | – | – | 2 | – |
| 56 | Greenfield, | 14,028 | – | – | – | – | – | – | – | – | – | 1 | – | – |
| 57 | Wakefield, | 13,664 | – | – | 8 | – | 1 | – | 1 | – | – | – | 1 | – |
| 58 | Plymouth, | 13,430 | – | – | 1 | 1 | – | – | – | – | – | – | – | – |
| 59 | Adams, | 13,340 | – | – | 1 | – | – | – | – | – | – | – | – | – |
| 60 | Clinton, | 13,266 | – | – | 1 | – | – | – | – | – | – | – | 12 | – |
| 61 | Webster, | 13,242 | – | – | 1 | – | – | – | – | – | – | – | – | – |
| 62 | Norwood, | 12,879 | – | – | – | – | – | – | – | – | – | – | – | – |
| 63 | West Springfield, | 12,696 | – | – | 3 | – | – | – | – | – | 1 | – | – | – |
| 64 | Danvers, | 12,309 | – | – | – | – | – | – | – | – | – | – | 2 | – |
| 65 | Dedham, | 12,172 | 1 | – | – | – | – | – | – | – | 1 | – | – | – |
| 66 | Natick, | 11,924 | 1 | – | – | – | – | – | – | – | 1 | – | 6 | – |
| 67 | Saugus, | 11,625 | – | – | – | – | – | – | – | – | – | – | – | – |
| 68 | Easthampton, | 10,692 | – | – | – | – | – | – | – | – | 1 | – | 26 | 1 |
| 69 | Athol, | 10,582 | – | – | – | – | – | – | – | – | – | – | – | – |
| 70 | Bridgewater, | 10,468 | – | – | 2 | – | 2 | – | – | – | – | – | – | – |
| 71 | Winchester, | 10,451 | – | – | – | – | 1 | – | – | – | – | – | – | – |
| 72 | Braintree, | 10,162 | – | – | 4 | – | – | – | – | – | – | – | – | – |
| 73 | Palmer, | 10,019 | – | – | 1 | – | – | – | – | – | – | – | – | – |
| 74 | Towns, 5,000–10,000. | *346,607* | *3* | – | *14* | *1* | *1* | *1* | *3* | – | *2* | *6* | *37* | *2* |
| 75 | Towns, 2,500–5,000. | *182,889* | *2* | – | *14* | – | – | – | *8* | – | *1* | *5* | *10* | – |
| 76 | Towns under 2,500. | *212,530* | *1* | – | *14* | – | – | – | *1* | – | *1* | *4* | *16* | *1* |
| 77 | State Infirmary, |  | – | – | – | – | – | – | – | – | – | – | – | – |
| 78 | Camp Devens, |  | – | – | *2* | – | *1* | – | *1* | – | *110* | *3* | *67* | – |

In addition to the above there occurred 20 cases of anterior poliomyelitis, 1 in Belmont, 1 in Boston,
Springfield, 1 in Sterling, 1 in Whately and 1 in Winthrop, with 12 deaths, 4 in Boston, 1 in Brockton,
in Tewksbury State Infirmary; 1 case of anthrax in Peabody; 2 cases of dog bite (requiring anti-rabic
Ipswich, 2 in Medfield, 3 in Melrose, 1 in Newburyport, 1 in Pelham and 1 in Somerville, with 20 deaths,
ton, 2 in Malden, 1 in Montague, 1 in New Bedford, 1 in Newburyport, 1 in Northampton, 1 in Pelham,
3 in Camp Devens, 1 in Dedham, 1 in Fall River, 2 in Natick and 21 in Uxbridge; 2 cases of pellagra,
ton and 1 in Plymouth, with 1 death in Plymouth; and 2 cases of septic sore throat, 1 in Boston and

TO THE PUBLIC HEALTH — *Concluded.*

| 38A<br>Ophthalmia Neonatorum. | | 38B<br>Suppurative Conjunctivitis. | | 75A<br>Trachoma. | | 19C<br>Mumps. | | 7<br>Scarlet Fever. | | 28-29<br>Tuberculosis, Pulmonary. | | 30-35<br>Tuberculosis, Other Forms. | | 1<br>Typhoid Fever. | | 38C<br>Gonorrhœa. | | 37<br>Syphilis. | | 8<br>Whooping Cough. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| - | - | - | - | - | - | - | - | - | - | 2 | 1 | 1 | - | 7 | 1 | - | - | 1 | - | - | - | 52 |
| - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | 1 | - | - | - | - | - | - | - | 53 |
| - | - | - | - | - | - | - | - | 2 | - | - | - | - | - | - | - | 2 | - | - | - | 2 | - | 54 |
| - | - | - | - | - | - | - | - | - | - | 8 | 1 | - | - | - | - | 1 | - | - | - | - | - | 55 |
| 1 | - | - | - | - | - | 2 | - | 5 | - | 1 | - | - | - | - | - | 4 | - | - | - | 9 | 1 | 56 |
| - | - | - | - | - | - | 2 | - | 2 | - | - | 1 | - | 1 | - | - | 1 | - | - | - | 1 | - | 57 |
| - | - | - | - | - | - | - | - | - | - | 2 | 1 | - | 1 | 4 | - | 2 | - | - | - | 4 | - | 58 |
| 1 | - | - | - | - | - | - | - | - | - | 1 | 2 | 2 | 1 | - | - | - | - | - | - | 3 | - | 59 |
| - | - | - | - | - | - | - | - | 1 | - | 7 | 3 | - | - | - | - | 1 | - | - | - | 1 | - | 60 |
| - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 | - | 2 | - | - | - | - | - | 61 |
| 1 | - | - | - | - | - | - | - | - | - | 7 | - | - | - | - | - | 2 | - | - | - | - | - | 62 |
| - | - | - | - | - | - | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | - | - | - | 63 |
| - | - | - | - | - | - | - | - | 1 | - | - | 4 | - | - | - | - | - | - | 1 | - | - | - | 64 |
| - | - | - | - | - | - | - | - | - | - | 1 | 1 | 1 | - | - | - | 2 | - | - | - | - | - | 65 |
| - | - | - | - | - | - | - | - | 1 | - | 1 | - | - | - | - | - | 2 | - | 1 | - | 2 | - | 66 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 67 |
| - | - | - | - | - | - | - | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | 1 | 68 |
| - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | 3 | - | 5 | - | - | - | - | - | 69 |
| - | - | - | - | - | - | - | - | - | - | - | 2 | - | 1 | 1 | - | 1 | - | - | - | - | - | 70 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | 1 | - | 2 | - | 71 |
| - | - | - | - | - | - | - | - | 1 | - | 1 | - | - | - | - | - | 2 | - | - | - | 4 | - | 72 |
| - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 2 | - | - | - | - | - | 73 |
| *6* | - | - | - | - | - | *5* | *1* | *13* | *1* | *23* | *16* | *1* | *5* | *10* | *2* | *33* | - | *9* | - | *40* | *5* | 74 |
| - | - | *1* | - | - | - | - | - | *2* | - | *19* | *12* | *1* | *2* | *8* | *1* | *8* | - | *3* | - | *23* | - | 75 |
| *1* | - | *1* | - | - | - | *2* | - | *8* | - | *16* | *19* | - | - | *2* | - | *28* | - | *6* | - | *9* | *2* | 76 |
| - | - | - | - | - | - | - | - | - | - | *12* | *16* | - | *1* | - | - | *6* | - | *6* | *2* | *1* | - | 77 |
| - | - | - | - | - | - | *11* | - | - | - | - | - | - | *1* | *4* | - | - | - | - | - | - | - | 78 |

1 in Cambridge, 2 in Dedham, 2 in Holyoke, 2 in Hopedale, 5 in New Bedford, 1 in Northampton, 2 in
1 in Cambridge, 1 in Dedham, 1 in Hopedale, 1 in Marlborough, 1 in Milford, 1 in Sterling and 1
treatment) in North Attleborough; 20 cases of dysentery, 2 in Boston, 6 in Dartmouth, 2 in Essex, 2 in
1 in Amesbury, 1 in Beverly, 1 in Boston, 1 in Bridgewater, 1 in Chicopee, 2 in Dedham, 1 in Easthamp-
1 in Rowley, 1 in Salem, 1 in Scituate, 1 in Taunton and 1 in Whitman; 31 cases of malaria, 3 in Boston,
1 in Leominster and 1 in Lynn, with 2 deaths, 1 in Danvers and 1 in Lynn; 2 cases of tetanus, 1 in Brock-
1 in Haverhill.

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner of Health, Eugene R. Kelley, M.D.

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| | |
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[1] Leave of absence, military service.

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# THE COMMONHEALTH

VOL. 5, NO. 12 DECEMBER, 1918

## MONTHLY BULLETIN

MASSACHUSETTS
STATE DEPARTMENT OF HEALTH

EUGENE R. KELLEY, M.D., COMMISSIONER

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# PULMONARY TUBERCULOSIS AMONG TENEMENT DWELLERS IN BOSTON.[1]

By Weaver W. Pangburn, South End House Fellow, 1915–16.

THE considerable number of rejections for physical disability among candidates for the United States army has directed public attention more than ever to the health of the people. Tuberculosis is one of the principal causes of rejection among drafted men. It is the purpose of this article to present data concerning the apparent relation of phthisis, pulmonary tuberculosis, to the life and habits of the people in certain districts of Boston. This study represents a patient and intensive examination of 414 cases in the North, West and South Ends of the city.

This article has to do, not with the means of the spread of tubercular infection, but with the causes that lower the resistance of the body to the disease. A United States health report gives the following list of such influences: lack of proper food, exhaustion, bad air, other diseases, alcohol and inhaled cigarette smoke. It is a matter of common knowledge that processes and conditions in some industries also predispose to tuberculosis. Many of the foregoing causes are frequently involved with a condition of poverty.

Any one familiar with conditions in the congested parts of the North, West and South Ends of Boston knows that many of the above list of devitalizing influences are there in operation. Health reports, moreover, show that tuberculosis is prevalent in these districts. Something more than superficial comparison of these two sets of facts is necessary, however, in order to show the relation of tuberculosis to living conditions.

The history of each case studied in this investigation was charted from information secured through the co-operation of the out-patient department of the Boston Consumptives' Hospital and social workers, and from personal visits to homes and industries. At the home, methods of recreation, habits, length of residence and housing were examined. Not only the housing at the immediate residence was studied, but also that at previous residences.

Of 414 cases, 382 were located in tenements, that is, dwellings containing two families above the first floor. One hundred and ninety-five patients, almost one-half of the total, were of Hebrew stock; 69 of Italian; 46 of Irish; and 15 Syrian; 309 cases in all were among the foreign born. Jewish people in general are said to have a great resistance to phthisis because the race has passed through a long course of urbanization since mediæval times, and has avoided excesses like alcoholism. It appears, however, that the bulk of the Jews in the sections of Boston under consideration come largely from the rural districts, small towns and small cities of Russia. Like most of the Italian immigrants into the United States they have not been greatly urbanized. These people have come to this country to find conditions of housing and industry worse than those to which they were accustomed in Russia. Over 42 per cent. of the foreign-born tuberculous developed the disease within five years' residence in this country, and over 68 per cent. within ten years.

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[1] By permission of the Journal of Outdoor Life.

In this study the economic condition, including size of families, amount of income, rents, insurance, charitable aid, and especially the quality and quantity of food, was closely examined. Lack of space will not permit details concerning these items. It may only be stated that, considering the size of families, amount of rents and amount of income, it would be expected that the food supply had suffered in quantity and quality; however, investigation showed that this was not the case in the greater proportion of instances. In a total of 93 cases, 22.4 per cent., there is a record of inadequate or unsuitable food supply. Persons well informed concerning the comparative living conditions of the Jewish people in Russia and in Boston testify that the food is superior and more abundant here. There is some evidence that the Italians unnecessarily limit their food supply. Lodgers eat usually at restaurants, and their diet is often irregular, scanty and ill-chosen. In only 12 cases does inadequate food appear as an outstanding cause of tuberculosis.

Excesses, chiefly in the use of alcohol and tobacco, appear in 101 instances. In only 12, however, were excesses the outstanding cause of lowered resistance to the disease. In the other 89 instances excesses were complicated with other depressing influences.

Exhaustion is a frequent cause of lowered vitality. It may include overwork, late hours, over recreation, worry and abuse. It was difficult to obtain full information on exhaustion as a cause, especially with reference to late hours, excessive recreation and worry. Late hours are common among lodgers. Exhaustion was a factor in 58 instances, and appeared as an outstanding cause in 6 instances.

The recreational life of the tenement population is all too meager. Most of the recreational life of the adult population is indoors, especially in winter. The middle-aged woman is usually found during her leisure time on the doorstep or within the dwelling. The middle-aged man has his lodge. The young people and the children make frequent use of the gymnasiums and social opportunities in the settlements, and patronize the public playgrounds. Whenever an individual is overworked his recreational life suffers, as he is too tired or has too little time to seek wholesome outdoor pleasures. Lack of wholesome recreation must be given considerable place among the causes leading to lowered resistance to tuberculosis.

There are 44 occupations represented in the 414 cases covered in this investigation. The largest ten groups are as follows: —

| | |
|---|---|
| Housewives, | 97 |
| Students, | 57 |
| Tailors in small shops, | 34 |
| Laborers, | 23 |
| Clerks, | 14 |
| Women in factories, chiefly cigars and candy, | 13 |
| Maids, mostly general housework, | 12 |
| Men in tailoring establishments, | 12 |
| Cobblers, | 10 |
| Factory hands, | 10 |

Housewives are shown to have the largest group. There is nothing inherent in the life of the housewife that predisposes to tuberculosis. In the tenements, however, the lot of the housewife is often cast in rooms where sunlight is inadequate, ventilation poor, or dampness and cold prevalent. The question of the indoor life of the housewife is, therefore, closely involved with the existing housing conditions.

By "students," as here used, is meant pupils in high school and in the grades. Under a well-adjusted schedule there is nothing inherent in school life to lower resistance to disease. Moreover, the Boston schools are not found to be inimical to health in matters of lighting and ventilation.

The next largest group by occupation is that of tailors in small shops. There are still some small tailor shops that are poorly lighted and ventilated. Some of the cases of tuberculosis can be laid to this cause. It is true, however, that the majority of men who go into this business are of slight physique at the outset.

A summary of the cases with reference to occupation shows a total of 31 instances in which industrial conditions appear as a cause. In 8 of these they were the outstanding cause. The particular conditions predisposing to tuberculosis in these occupations were industrial dusts and poor lighting and ventilation.

There is a record of previous disease, lifelong weakness, or injury to or operation on the chest in 209 cases. Bronchitis appears in 22.2 per cent. of all cases; pleurisy in 19.5 per cent.; pneumonia in 13.2 per cent.; rheumatism in 9.6 per cent. and typhoid in 8.2 per cent. Scarlet fever, diphtheria and influenza appear frequently, while measles and whooping cough are common. There is a combination of several diseases in the history of many cases. Predisposing disease was a factor in 105 cases. In only 17 of these, however, does previous disease seem to be the outstanding cause. The per cent. of all cases showing predisposing diseases is 25.3.

## Housing.

The districts from which the cases of phthisis in this study were drawn are the most congested parts of Boston proper. They are characterized by all the evils that usually go with congested tenement areas. There are some streets so narrow that a single vehicle fills the space from curb to curb, while the sidewalks of these streets have a corresponding width. Only rarely is a street from building to building of a distance equal to the height of the flanking tenements, — a width that the better building codes now require. For a considerable part of the day the direct sunlight is cut off from the first, second and sometimes the third floors of many tenement houses. Bathrooms and water-closets in tenements are usually ill-lighted, and some of them are filthy. It is difficult to keep courtyards and streets free from refuse. The first floors of the tenements — "stoops," as the tenants call them — are generally cold in winter, and often damp. The top stories, being most exposed to the wind, are also frequently cold in winter. Families seek the lower floors in order to avoid the long, wearisome climb up several flights of stairs. But some, especially those in which a member is ill with tuberculosis or other disease, move to the top floor with its superior light and ventilation. The tenement dwellers have an unwise custom of making a parlor of the sunniest and best-ventilated room in the flat, although that room is little used, and of putting the beds in the middle rooms, which are the most gloomy and have inferior ventilation. In large families all the available space in the bedroom is frequently crowded with beds.

It is under such home conditions that the tenement mother and her children spend more than half their time, and the men, from one-third to one-half their time. Such conditions make the rearing of children in the city tenement a very difficult undertaking. The writer on his rounds through the congested districts of Boston took occasion to scan the faces of hundreds of small children six years and under, those who stay about the home and are to be seen playing in the doorways and in the street near at hand. Their faces appeared pale and their general condition weakly. This was at the end of the summer during which one would expect them to have had a maximum of outdoor life, and to be in good physical condition. The older children, who had had access to the public baths and were not compelled to remain near home all day, looked brown and strong.

From the point of view of the suburban dweller, or of one accustomed to a yard, garden, trees, grass, an abundance of fresh air and sunlight, an outlook on something attractive, there is no such thing as a "good" dwelling in the districts that have just been described. But in trying to distinguish between the good and the bad dwellings, for the purpose of estimating the effect upon health of housing conditions, one's judgment must take no account of the æsthetic, and must be liberal even in that which concerns health.

It was discovered that bad housing conditions appeared in 249 cases. If one were to add the cases where conditions were only fair, the total of unsatisfactory cases would reach 322, and that would be no exaggeration. In 91 instances, 21.9 per cent., housing appeared to be the outstanding cause. Of the cases of phthisis among persons of Jewish stock, 129, or over 66 per cent., had been subject to bad housing conditions, while among the Italians 55, or almost 80 per cent., had been so subject.

The cases in which none of the causes which we have been considering were in evidence numbered 32.

A summary of causes in the order of their importance shows bad housing in 249 cases, 61.4 per cent.; previous diseases in 105 cases, 25.3 per cent.; excesses, 101 cases, 24.9 per cent.; repeated contacts, 75 cases, 18.1 per cent.; faulty food supply, 63 cases, 15.2 per cent.; exhaustion, 58 cases, 11.6 per cent.; occupation, 31 cases, 7.5 per cent.; lack of recreation, 19 cases, 4.6 per cent.; two or more causes, 221 cases, 53.3 per cent.

Housing is the outstanding cause in 90 cases, or 21.7 per cent. of all cases. Previous disease and repeated contacts are next in importance, with 17 cases each, or 4.1 per cent. Such causes as exhaustion, lack of recreation, and possibly the nature of the occupation, are probably more important than the records show.

The conclusion is that for the group of people here studied, bad housing was the chief cause predisposing to tuberculosis. There is no question in the mind of the writer but that many cases of tuberculosis in these districts were brought about solely because of a continued residence under bad housing conditions. The injustice of the city to the immigrant, or to any one compelled to live amid conditions of lightlessness and airlessness, is manifest; but the case of the unsuspecting immigrant is the more pathetic.

While this study indicates bad housing as the greatest predisposing cause, it is clear that in most cases of tuberculosis there are a number of causes. Many people who live in poor houses also have inadequate food supply, live in an unhygienic way, and do not take adequate exercise. Overwork and alcoholism frequently go together. Where a case history shows a variety of causes, who can say which was the first cause or which the most responsible?

# LESSONS FROM A STUDY OF ONE THOUSAND DIPHTHERIA DEATHS.

By Bernard W. Carey, M.D., Epidemiologist, State Department of Health.

A STATISTICAL study made by the Massachusetts State Department of Health of 1,000 deaths due to diphtheria has taught several interesting and important lessons.

Deeply concerned by the apparent apathy of physicians and organized health agencies towards the failure of the morbidity rate to decline, while the mortality rate has been so markedly reduced by the use of antitoxin, the department started an investigation to ascertain, if possible, what factors might be responsible for this condition, and to remedy them if possible.

The fact that the morbidity curve has not followed the decline of the mortality curve means much, for in diphtheria we have one of the few conditions for which there are available accurate means for diagnosis both of the acutely ill and of the healthy carrier, agencies for determining the susceptibility of persons, with their subsequent immunization, and specific therapy for treatment of the infected individual.

In order that the statistics might be uniform, blanks were prepared asking for the name, age, sex, school, social condition, date of onset, date of physician's first call, date of administration of antitoxin and amount, source of infection, form of the disease, date and cause of death.

From an epidemiological viewpoint results were not different from what was expected; the age incidence agreed with figures set forth by the Federal Census Bureau, which states that "about 65 per cent. of all deaths from diphtheria and croup in the registration area occurred in children under five years." The statistics from our studies were as follows: —

| | | |
|---|---|---|
| 1 year or under, | 20.0 | |
| 2 years, | 13.4 | |
| 3 years, | 11.9 | |
| 4 years, | 9.8 | |
| 5 years, | 6.9 | |
| | | 62.0 |
| 6 years, | 7.4 | |
| 7 years, | 5.5 | |
| 8 years, | 3.7 | |
| 9 years, | 2.1 | |
| 10 years, | 1.8 | |
| | | 20.5 |
| 11 to 15 years, | 3.0 | |
| 16 to 25 years, | 1.3 | |
| 25 to 60 years, | 1.1 | |
| Age not given, | 12.1 | |
| | | 17.5 |
| Total, | | 100.0 |

*Sex.* — Creighton states that "diphtheria is the only epidemic condition, besides whooping cough, which is more fatal to females than males in proportion to the number of each sex living." In the earlier age groups a slight increase in the male deaths has been found, while in the later age group females were seen in increased proportion. When one considers that, as a rule, females come in closer contact with the infection, acting as nurses for those ill, it is perhaps apparent why this increase in the female groups should occur.

*School.* — The influence that school plays in diphtheritic infection is one of extreme interest and importance. As the greatest number of deaths occurred in children under school age, it might first appear that they were not under school influences, but the question naturally arises, did they receive their infection from school sources, or are they the source of school infection which has been carried from the home. As far as is known at the present time there have been no statistics to prove just how great a part the school plays in the distribution of diphtheria in this preschool group. A special investigation is planned to determine, if possible, just what relationship may exist between these particular age groups.

In the later age groups the school factor plays a large part in the spread of diphtheria. In the rural communities, with little or no school supervision, the disease is apt to spread rapidly, and occur as an outbreak of varying size. In the city, where there is more efficient school supervision, the taking of cultures, with prompt detection of healthy carriers and incipient cases, giving earlier recognition of the disease, proves an admirable means of prevention and control of diphtheria outbreaks.

*Social conditions* seem not to play a very great part in the deaths, for while the greater number occurred among the poorer class, a considerable number of deaths occurred among the more well-to-do.

The most common cause for this was in the group of unrecognized cases, with its mild insidious onset resulting in the late attendance of the physician, and the late administration of antitoxin. It was also found that many of the deaths followed intubation. This of course is a procedure instituted late in the disease, when the heart muscle, weakened by toxic agents of the infection, is not able to withstand the strain of added muscular resistance. The question arises whether it would not be better to do a tracheotomy, having the opening permanent with resulting freedom in breathing, than to intubate, with the risk of the intubation tubes coming out or becoming plugged with exudate, necessitating reintubation.

*Source of Infection.* — One result of the investigation showed that the source of infection was known in only 10.7 per cent. of the cases, and unknown, or not given, in 89.3 per cent. Here is evidence that it is indeed hard to trace positively the source of infection when all groups of people are taken. It was found particularly difficult in the foreign element, who either could not or would not give the required information. Among the English speaking groups there was marked evidence that the interest in the epidemicity of diphtheria was lacking, even in those cities and towns where health officers were employed on a full-time basis.

The axiom that "scientific diagnosis must precede intelligent treatment" might well be paraphrased to "intelligent epidemiological investigation must precede efficient control of outbreaks," for we surely cannot reduce the morbidity rates of communicable diseases with infecting sources unrecognized and at large.

The percentage of seasonal incidence of the deaths was as follows: January, 9.5; February, 9.6; March, 7; April, 85; May, 3.8; June, 5.8; July, 2.8; August, 6.3; September, 7.2; October, 10.9; November, 12.6; December, 12.3; not given, 3.6. This is of value only to confirm other statistics which have been compiled from other sources.

*Form of the Disease.* — In the study of the deaths, laryngeal diphtheria was far more prevalent than other forms; pharyngeal was next in order of frequency, and nasal form last. Many physicians appear to feel that membranous croup is still a distinct disease, and do not recognize it as a diphtheritic infection until too late. Perhaps one reason for the retention of this erroneous opinion is that, due to faulty technic, positive cultures are seldom obtained in the earlier period of the disease. In order to obtain a positive culture in the beginning of this form of diphtheria it is absolutely essential that cultures be taken from the larynx, and to do this a proper speculum, good light and an assistant are needed. It is, however, under these conditions, perfectly feasible, and if employed would mean the earlier recognition of the disease and administration of antitoxin, with resulting lowered mortality.

This difficulty of culturing does not exist, however, in the pharyngeal type, and some other reason must be sought to account for the excessive number of deaths. One of the most prominent appears to be that in many instances the condition is unrecognized, and is treated as a simple tonsillar infection until too late for the antitoxin to be efficacious. The nasal type also plays an appreciable rôle in our deaths. Many histories show that this condition was unrecognized, and the treatment in many instances was that for a catarrhal infection or "common cold."

The obvious deduction to be made is simply this: a culture should be taken in all conditions where there is a possibility, even though remote, that diphtheria is present. Here without doubt is the basic feature which can play the greatest part in controlling the morbidity and mortality rate.

*Causes of Deaths.* — In general, statistics classify the deaths in diphtheria as those due to cardiac, respiratory or toxic causes. It seemed, however, that an analysis of these causes should be made to see if it would be possible to obtain any more definite information as to the exact cause of death. This angle of the investigation was approached by inquiring first as to the number of days the patients were ill without medical attention. The findings were as follows: one day, 17; two days, 34; three days, 41; four days, 37; five days, 35; six days, 28; seven days, 39; eight days, 6; nine days, 2; ten days, 14; eleven or over, 20; several days, 42. In other words, 23.1 per cent. were sick a week, 4.2 per cent. were sick from one to two weeks, and 4.2 per cent. were ill several days without medical attention.

It is amazing that so many children should be so neglected by those responsible for their comfort and welfare. Something must be done to awaken in these people their sense of responsibility. It would appear that education of this group of individuals must be undertaken to arouse them from their state of indifference or ignorance. How this result is best to be obtained may vary with the individual or locality, but it is perfectly clear that health workers, worthy of their vocation, should bend every effort to this end, doing their utmost to save from needless deaths these children who form the very foundation of society.

Health authorities for years back have impressed upon the medical and lay mind the necessity for early administration of antitoxin to achieve the best results, and they can only hope to achieve this reduction in the mortality rate by constantly emphasizing on every occasion the necessity for calling the physician early in the sickness, laying particular stress upon the fact that the mortality of diphtheria, when treated with sufficient dosage of antitoxin, given within twenty-four hours of onset, is relatively negligible.

In some instances it was noted that physicians waited for a laboratory report from their cultures before administering antitoxin. This is of course a mistake, and the dictum that a patient who requires a culture to be taken should have antitoxin administered at the time of taking the culture is one which should be reiterated until the procedure is generally adopted by the entire medical profession.

One other factor which demands comment is that 7.6 per cent. of the deaths occurred in "unrecognized" cases. Here, indeed, is a sad state of affairs, for with the numerous laboratories scattered throughout the State diphtheria should not go unrecognized. The State Department of Health, through its bacteriological laboratories, is ready to examine all cultures which may be sent in and will, on all positive cultures, telephone or telegraph the report, at its own expense, to the physicians who have sent in the culture. Surely, with this free service of our laboratories, the free distribution of antitoxin and Schick material for detection of the non-immune, and the toxin-antitoxin mixture for immunization, we have some right to expect that these facilities will be used to effect a diminution of the morbidity rate as well as of the mortality rate.

The alarming percentage of 11.8 of our cases were found moribund upon visitation by the physician. Here, again, is evidence of the necessity of awakening people through educational methods to their responsibility to their children.

Another occurrence which the investigation showed in larger proportion than is generally recorded was that of sudden death, which was stated to have occurred in 5.2 per cent. of the cases. In many instances lack of nursing care was the responsible factor. Parents ignorant even of the fundamental principles of nursing had the care of their children, allowing them to get out of bed too early, or, through a mistaken idea of kindness, giving unsuitable food which caused grave gastric disturbances, vomiting with its associated muscular strain, and collapse from weakened cardiac muscles.

Another factor in the sudden death group appeared to be the repeated attempts at intubation, where, for some reason, the tube was either not properly introduced or else expelled.

*Antitoxin.* — The dosage of antitoxin, both as to amount and intervals between doses, varied extremely. In 29 instances it was found that less than 3,000 units were administered. The amount increased from this to a point where a young child of three years received 225,000 units. The usual doses, however, seem to have been from 6,000 to 9,000 units. The number of doses varied from one to several on consecutive days, and in a few instances antitoxin was administered every four hours until death occurred. In one instance 80,000 units were given in this manner.

One striking feature was present, — in no instance did we find antitoxin given intravenously. In the early days of the use of serums there was a great deal of hesitancy in introducing directly into the blood stream foreign bodies, for fear of untoward effect, but with added years of experience it is now known that this procedure is not only feasible, but that results are more rapid, more certain and a much smaller amount of serum is required. It is most earnestly recommended that this procedure be used in those cases which are first seen late in the disease.

With such a lack of uniformity in the use of antitoxin it seems as if the medical profession should be informed, from authoritative sources, as to the most approved method of its use, and its dangers through misuse, either in dosage or method of administration.

Particular stress should be laid, in the instruction of medical students, upon the necessity of properly administering antitoxin, thus avoiding the chances for anaphylactic reaction, and there should be impressed upon them the need of early and sufficient treatment.

Full realization of these facts can only lead to the conclusion that the progress toward eradication of diphtheria has fallen short of what reasonably might have been expected.

# ESSENTIAL ACTIVITIES OF BOARDS OF HEALTH.[1]

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By Lyman Asa Jones, M.D., State District Health Officer.

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FOR many years after the settling of this Commonwealth the subject of health as applied to the community appears to have received but little consideration. In the early days this perhaps was but natural, since the population was small and scattered, and transportation facilities were limited. The household, with its concerns and its health, constituted the unit.

In the absence of knowledge of the specific causes of disease and their manner of spread there was often a feeling that sickness was an affliction permitted by Providence as a punishment for transgression.

Gradually, with increase in population, added means of transportation, growing knowledge of disease and greater interdependence of communities there came recognition that matters of health and sickness concerned not merely the household afflicted, but that they involved the community as a whole. Thence it was but a step to the recognition of the fact that sickness and health concern the State and Nation as well.

The possibility of securing and maintaining public health is coming to be more and more recognized. There is an increasing acceptance of the statement which appears regularly in the weekly bulletin of the New York City Department of Health, that "Public health is purchasable. Within natural limitations a community can determine its own death rate." The truth of Pasteur's saying, based on our present-day knowledge of disease, that "it is within the power of man to banish from the world all infectious diseases," is coming to be more and more appreciated.

The earlier conception of health work was more or less limited to the caring for outbreaks of disease *after* they had occurred rather than to bringing about their prevention. While the control and suppression of an outbreak is now no less desirable than heretofore, it is only a matter of common business sense that the prevention of the outbreak, with its accompanying burden of death, suffering and interference with daily life, is even more important.

There is also a rapidly growing appreciation of the importance of *preventing* ill health and inefficiency due to removable causes of whatever nature. In consequence the activity of a board of health may reach out in many directions which hitherto have not been considered as being strictly within the field of health work.

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[1] Read before the School for Health Officers, Massachusetts Medical Society, May, 1918.

Indeed, the statutes expressly state that the health department "shall take cognizance of the interests of health and life among the citizens of the commonwealth." It is this broad injunction which justifies engaging in work having to do with modifying the effects of sickness, such as the after-care work in infantile paralysis; or in work looking toward the prevention of sickness, such as the physical examination of prisoners, as provided by a recent act of the Legislature, instead of merely limiting efforts to caring for communicable disease after it is present in a community.

The activities of a board of health may well vary according to the locality and the special problems of the particular locality concerned.

Essential to good health work in any community, however large or small, is an appreciation of the value of health work, and the provision of funds with which to carry on the work and to employ the necessary trained workers. We do not expect to obtain competent medical advice or legal consultation free, from untrained men, nor to secure household supplies without payment. Neither should we expect to secure good health work free, or seek to secure it from those who lack all knowledge of health matters.

The relative advantage or disadvantage of part-time or full-time health workers need not be elaborated here except to point out that it is not easy to serve two masters, — the community and one's self. For where a livelihood is at stake and the community payment is merely nominal, even a conscientious worker can hardly be blamed if the community work suffers.

The primary essential activity for any board of health is that it shall familiarize itself with the health laws of the State, and that it shall acquaint itself with existing local health regulations and provisions, so that it may clearly understand its authority under the law, for without such knowledge it is not in a position to act intelligently and with judgment.

It is also essential for a board of health to study the community under its supervision in order that it may be familiar with conditions existing in or peculiar to the place, and that it may have knowledge of present or possible sources of danger; it is essential for a board to study the community's vital statistics, which indicate the measure of the community's health, and frequently disclose the field in which corrective efforts are the more urgent.

It is also essential that tactfulness be exercised in health work, wherever possible, rather than force, because much of the opposition to health measures is based on ignorance on the part of the community as to the necessity for such measures.

As already intimated, the essential activities of a board of health will vary somewhat according to the community in question.

Plague, for example, occurs rarely in this country, and protective work is limited practically to the coast regions. Yellow fever occurred chiefly in the south, and has been eliminated since its relation to the mosquito has been known. Hook worm disease is largely limited to certain parts of the country, especially to the south, where lack of privies and soil pollution are pronounced. The fly nuisance is of much greater importance in a locality dependent upon unprotected toilets than in a well-sewered city.

Nuisances come under the board of health by provision of law, but do not rightly belong there. They are not usually a cause of sickness, but rather a source of annoyance and vexation.

In case the board of health does not act, under the law, appeal should be made to the county commissioners in Massachusetts, not to the State Department of Health.

1. Control and prevention of communicable diseases cannot be accomplished without co-operation of the public and the medical profession in making prompt report of all cases and of all suspicious cases. Investigation of all such reports should be made immediately, the same day if possible, to obtain a careful sanitary history of the case. The findings should be recorded on a suitable card or sheet for filing and reference. Such investigations are important because, even though the source of infection is not determined in every instance, detailed histories of cases of typhoid fever or other diseases in a given community over a series of months or years finally yield valuable clews, or afford information which results in a removal of the cause of the disease.

To illustrate: through a series of years typhoid cases occurred from time to time at a railroad junction in a city in western Massachusetts. Many railroad employees and others living near by were afflicted. The section was dependent upon a private water supply, furnished both for domestic and railway use. Later the railway supply was supplemented by pumping from an adjoining stream which received the drainage from two towns located farther up the stream. Regular investigation of cases eventually disclosed what had been hitherto denied, — a connection between the domestic system and the pumping system, whereby river water from time to time entered the domestic pipes. The removal of this connection and the installing of the city water ended the typhoid cases in this section.

In another Massachusetts city a careful study of typhoid cases over a period of seven years finally located a carrier who had been responsible for 65 cases of the disease, and prevented further cases from this source.

Prompt investigation and the taking of cultures will often bring an outbreak of diphtheria in school to an abrupt stop.

The field of investigation in communicable disease work, broadening as our courage grows under pressure of conditions, now includes venereal disease work.

2. The study of infant mortality, efforts to secure its reduction, the consideration and carrying out of measures to promote the welfare of infants and young children up to the school age, constitute another essential activity of boards of health, and is wholly in keeping with the broader ideal of public health work.

This can be readily appreciated, if it be recalled that there are annually in Massachusetts about 10,000 deaths of infants under one year of age, approximately 100 out of every 1,000 births. Forty per cent. of these occur during the first month of life, thus emphasizing the need for prenatal and infant welfare work. In this connection a series of prenatal letters for expectant mothers is distributed by the State Department of Health. This work can best be done by public health nurses, employed by boards of health or private organizations.

Such work is worth while. In this manner New Zealand has reduced its infant death rate to 50 per 1,000 births.

One Massachusetts town of about 10,000 population through such work has had no infant deaths due to digestive disturbances for a period of two years, except one infant who was sick when brought into the town from another community.

3. A very essential feature of health work in any community is that connected with school hygiene. It is true that in most places this work is in the hands of school authorities so far as the public schools are concerned.

The board of health may properly co-operate by helping in any way which presents itself in perfecting or raising the standard of such work, or in creating an intelligent public sentiment which will lead to a realization of the possibilities of school hygiene.

In the case of private and parochial schools, which are automatically shut out from the benefit of such work so far as the public school authorities are concerned, a board of health may properly, as a health measure and as affording protection to the public at large, seek to establish a similar plan of school hygiene work.

School hygiene comprehends the proper location of school buildings, with ample space for gardens and playgrounds; also the character of the school building, to see that it is beautiful and suitable, provided with sufficient light and ventilation, a safe water supply for drinking and washing purposes, suitable toilets, the cleanliness of the building, its equipment with proper furniture, etc.

School hygiene includes, also, attention to the pupil, a careful annual physical examination with records, which should accompany the pupil from grade to grade, and efforts to correct any defects discovered.

The teaching of hygiene is included also, so that the pupil may know how to care for himself and how to avoid unnecessary exposure to infection. The school physician and the school nurse are the ones who should conduct the medical part of this work.

The actual financial value of such work to the community in lessened days of absence from school because of preventable causes, and the resulting increased efficiency, could be conclusively demonstrated did space permit.

The health department should emphasize the importance of examining minors on entering industry, and, though the matter is not under their supervision, should urge that the examining physician have first-hand knowledge of the industrial conditions under which a child proposes to work.

4. Because they are under constant supervision of State authorities in Massachusetts, the protection of water supplies (public) is one of the less essential duties of the board of health, except that in rural sections boards may properly guard against the use of wells and springs so located that they are likely to be polluted.

The disposal of waste is largely under the supervision of State authorities, more particularly in the larger communities, but a local board of health, even in these places, may properly seek to keep the sewer facilities abreast of the demands of a growing community, while in smaller places, where there are no public sewerage systems, they may properly seek to control the location of cesspools and the disposal of waste in such a manner as will not be likely to cause pollution of public or domestic water supplies.

It is true that a polluted water supply may sometimes be used over long periods of time without causing specific disease because of the absence of the specific agent of infection. Its use is none the less unsafe, however, because the possibility of the introduction of infection is always present.

5. The protection of foods and the prevention of adulteration of foods is another of the less essential activities of a board of health

in Massachusetts, since this is largely in charge of State authorities, for the trained workers and laboratories necessary for this work are beyond the needs or means of any but the largest communities.

What has just been said does not apply, however, to the inspection of dairies and slaughtering. These things are left very largely to local boards of health, who may properly take steps to protect foods from exposure to insects and street dust, and who should seek to have milk clean because of its importance to babies.

6. Educational activities of a board of health are perhaps the most important of all. These may be carried on through the distribution of printed rules or regulations, and through the newspapers, in which appropriate and timely announcements may be made in the form of paid advertisements.

At the approach of the vacation season warning against typhoid fever and the importance of pure milk and water could be stressed. With the advent of colder weather precautions against colds and pneumonia, and the importance of fresh air, might be emphasized. Attention could be called to the protection afforded by vaccination when smallpox was present in a neighboring community. In hot weather cautions as to the feeding of babies could be displayed.

Educational work may be carried on by the health nurse, who goes with authority. In many cases this is the only way. If a community is small, it may combine with others to form a district, and so support a worker and provide transportation.

Health exhibits may be arranged, and aid obtained from the State authorities.

Studies of vital statistics may be made and the result compared with those of other similar communities.

Lectures may be arranged before private organizations, clubs and churches.

# THE IMPORTANCE OF MINERALS IN THE DIET.

By Alzira W. Sandwall, S.B., Health Instructor on Foods, Massachusetts State Department of Health.

FROM 5 to 6 per cent. of all the solid matter in the human body is made up of the following minerals in varying amounts: sodium, potassium, calcium, magnesium, iron, phosphorus, chlorine, sulphur, silica, fluorine and iodine. When planning our meals, then, we must make ample provision for these inorganic substances. A diet not containing a suitable amount of them will be entirely inadequate. They yield no heat and little, if any, energy, but are so important that if the supply is entirely cut off death will take place in one month. They are the chief building materials of the bones and teeth, are absolutely indispensable in the blood, are found in every tissue of the body, and, in solution, in varying amounts in the digestive juices and all the vital fluids of the body.

Nearly all the minerals are found in the blood, iron forming the chief constituent of the red coloring matter. Sodium, chlorine and potassium are necessary in the digestive juices, while chlorine also helps to keep the blood alkaline. Calcium, phosphorus, magnesium, silica and fluorine build up the bones and teeth, silica serving too, in combination with sulphur, to keep the hair in good condition. Sulphur is found in combination with other minerals in all the tissues and secretions of the body. Potassium plays a big part by keeping the muscles soft and pliable, is needed by the nervous system, and is absolutely essential in the diet of growing children. Fluorine is found in the whites of eyes, while iodine is essential to the thyroid gland, and is believed to increase the resistance to disease.

It is easy to see, then, that any lack of these important food substances will be followed by serious results to the health of the individual. Such a lack is shown in the lusterless eye, pale cheeks, lack of energy, anæmia, rickets, hardening of the arteries, etc. To counteract such lack we find people taking iron pills and tonics of various kinds. These people should make a careful study of their diet to see if they are including in it foods rich in minerals.

Fortunately, all foods, with the exception of the pure sugars, starches and oils, contain some mineral substances, so that any ordinary mixed diet generally furnishes the body with a sufficient amount.

Those foods especially valuable for their mineral content are fruits, both the fresh and the dried; vegetables, especially the green vegetables; eggs, milk and cereals (the unprepared cereals, like oatmeal, corn meal, etc., containing more mineral substances than the "ready to eat" cereals, like corn flakes, etc.). Milk is rich in the lime salts, which are essential for the proper development of the teeth. Natural brown rice is a valuable source of iron, while very little mineral is present in the ordinary polished rice used by most housewives.

It is important not only to include foods rich in minerals in the diet, but to cook them so that none of the mineral will be lost. When we pare vegetables, cook them in water, or allow them to soak in water and then throw away that water we are wasting the most valuable part of the vegetables, that is, the minerals, because minerals are salts and soluble in water.

It is best, then, if we wish to safeguard the health of our families, to provide liberal amounts of fresh fruits, vegetables, cereals and milk, doing so, if necessary, by restricting the amounts of sweets and meats. It may be quite as necessary to teach our families to eat the foods that the body requires, for we sometimes find that even when a good diet is provided some member of the family will refuse one food or another, with no thought of its real function. We must learn to eat to live rather than to live to eat.

*Foods rich in Minerals.*

| MINERALS. | Foods where found. |
|---|---|
| Chlorine, | Eggs.<br>Lentils.<br>Common salt. |
| Sulphur, | Eggs.<br>Beans.<br>Peas.<br>Lentils.<br>Cheese.<br>Milk.<br>Meat.<br>Fish. |
| Silica, | Bran of wheat.<br>Yolk of eggs.<br>Peas.<br>Beans.<br>Strawberries.<br>Cereals.<br>Cherries. |
| Fluorine, | Vegetables.<br>Cereals. |
| Iodine, | Fish.<br>Kelp. |
| Sodium, | Common salt.<br>Baking soda.<br>Apple.<br>Egg.<br>Figs.<br>Strawberries. |
| Potassium, | Egg yolk.<br>Oats.<br>Barley.<br>Rye.<br>Corn.<br>Rice.<br>Cherry.<br>Peach.<br>Gooseberry.<br>Grape.<br>Nuts.<br>Peas, beans.<br>Fruits.<br>Vegetables. |
| Calcium, | Milk.<br>Parsnips.<br>Carrots. |
| Calcium, | Turnips.<br>Egg yolk.<br>Apple.<br>Cereals.<br>Asparagus.<br>Spinach.<br>Nuts.<br>Radishes. |
| Magnesium, | Cereals.<br>Bread.<br>Milk.<br>Fruits.<br>Eggs.<br>Nuts.<br>Figs. |
| Iron, | Spinach.<br>Egg yolk.<br>Unpolished rice.<br>Green vegetables.<br>Apples.<br>Beans.<br>Peas.<br>Lentils.<br>Prunes.<br>Gooseberries.<br>Strawberries.<br>Potatoes.<br>Red meat. |
| Phosphorus, | Milk.<br>White cheese.<br>Carrots.<br>Turnips.<br>Cabbage,<br>Potatoes.<br>Peas.<br>Beans.<br>Lentils.<br>Egg yolks.<br>Cereals.<br>Fruits.<br>Nuts.<br>Unpolished rice.<br>Pork.<br>Mutton.<br>Calf's brains. |

# STANDARDIZED WASSERMANN TECHNIQUE FOR STATE APPROVED WASSERMANN LABORATORIES.

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By W. A. Hinton, M.D.

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DURING the month of March representatives from the leading hospitals, boards of health and institutions of the State met in the Commissioner's office at the State House to discuss and settle upon a standard method of performing the Wassermann test. As a result of this meeting a standardized method was adopted by these representatives. This movement for standardization of Wassermann methods in Massachusetts has interested boards of health and other laboratories throughout the country, and numerous requests for the method adopted have been made. For this reason it seems advisable to publish the method in order that those interested might have easier access to it.

## Method of preparing Serums for the Wassermann Test.

After the blood is withdrawn and delivered into a test tube it is allowed to stand until it clots. It is then gently shaken until the clot is loosened from the sides of the tube.

If it is to be tested immediately the following method is employed. Place in a water bath at 37° C. for one-half to three-quarters of an hour; then withdraw the serum with a pipette to which a bulb is attached, the whole being very similar to a medicine dropper except that the drawn-out end of the pipette is longer. Wash the pipette several times by drawing up salt solution before using it for another serum; in this way one pipette only is necessary. The serum which has been withdrawn from the clot is delivered into a small test tube. If the serum is cloudy because of the presence of corpuscles it should first be centrifuged, then withdrawn with the pipette (with rubber bulb attached), and delivered into another small tube to be inactivated. The inactivation is carried on for one-half hour at 55° C. to 56° C.

If the serum is to be tested several days from the time of collection the following method should be followed. After the blood has clotted and has been gently shaken place it in an ice box. Twenty-four hours later pour off the clear serum into a small test tube and inactivate at 55° C. to 56° C. for one-half hour. Should it be cloudy because of the presence of corpuscles, centrifuge it and withdraw the clear serum for inactivation. Sometimes it is better to withdraw the serum with a small pipette with a bulb attached, as previously described. If the serum is not to be tested for several days after inactivation, add 5 per cent. carbolic acid in normal salt solution so that the ratio of the *carbolic acid solution* to the serum is 1 to 10.

Although the method described is very simple in practice, experience is necessary to develop a perfect technique, and our experience has been that many institutions which submit to us specimens for examination fail in many small details, and as a result incorrect reactions are obtained.

## Preparation of Reagents used in Wassermann Test.

1. *Antigen.* — A fresh human heart obtained at autopsy, stripped of its connective tissue and fat, is weighed, then cut into pieces about 1 centimeter in largest dimensions, and finally placed in a jar containing sufficient 95 per cent. alcohol to cover it, where it remains for one to two weeks. The hardened pieces of heart tissue are then ground as finely as possible with an ordinary meat grinder. To the 95 per cent. alcohol used in covering the tissue add an additional quantity of alcohol to make the proportion of heart weight to total alcoholic volume 1 plus 10. This alcoholic suspension of ground heart tissue is allowed to stand in the incubator at 37° C. for from two to three weeks. Occasional shaking is required. A small quantity of the alcoholic extract free from heart fragments and sediment is then withdrawn and saturated with cholesterin. The saturation with cholesterin can be done most easily by adding a small amount of cholesterin to the alcoholic extract of human heart, which is then incubated at 37° C. for from twelve to eighteen hours. The cholesterinized heart extract is then allowed to stand at room temperature. If cholesterin crystallizes out, the extract is saturated and no more cholesterin is added. If the extract is not saturated more cholesterin is added and this last operation repeated. When the alcoholic solution is saturated the excess of cholesterin may be filtered off, the clear filtrate being used as stock antigen. For daily tests this cholesterinized alcoholic extract is diluted with salt solution in the proportion of 1 part of the alcoholic extract plus 4 parts of saline.

The dilution of the antigen is carried on as follows: the amount of cholesterinized alcoholic extract for the day's test is calculated.

Pipette this amount into a glass bottle or flask, then add salt solution drop by drop, shaking thoroughly after the addition of each drop, until the amount of saline added is equal to the amount of alcoholic extract employed. Further addition of saline is added in half cubic centimeter quantities until the required amount has been added.

There is no way to standardize the antigen qualitatively or quantitatively except by testing its antigenic properties against a large number of known positive and negative specimens of blood.

2. *Complement.* — From 8 to 15 cubic centimeters of blood are obtained by cutting the carotid, or, preferably, by aspirating 6 to 10 cubic centimeters of blood from the heart of a guinea pig. This complement is allowed to stand for one to two hours at 37° C. to facilitate the separation of the serum from the clot. The serum is then withdrawn and diluted with salt solution to make a 10 per cent. solution. If the guinea pigs are bled from the heart the interval of bleeding should not be less than three to four weeks. A 19 gauge nickeloid needle attached to a 10 cubic centimeter Luer syringe is used for this bleeding.

3. *Red Blood Corpuscles.* — The 5 per cent. suspension of washed sheep's corpuscles in 0.85 per cent. salt solution is prepared from defibrinated sheep's blood. The corpuscles are washed three times, and for each washing four to five times as much 0.85 per cent. salt solution is used as the original volume of the defibrinated blood employed. Finally withdraw the supernatant salt solution until the volume of cells and salt solution together is equal to the volume of defibrinated blood originally used. The suspension of corpuscles in salt solution is called "washed sheep's corpuscles." In the test use a 5 per cent. suspension of the "washed sheep's corpuscles" made by diluting with 0.85 per cent. salt solution.

4. *Amboceptor.* — Amboceptor is prepared by injecting washed sheep's corpuscles into the peritoneal cavity of a rabbit at three-day intervals, namely, first injection, 7 cubic centimeters; second, 14 cubic centimeters; third, 21 cubic centimeters; and finally, 28 cubic centimeters. The rabbit is bled from its heart with a syringe on the eighth or ninth day after the last injection to obtain from 35 to 60 cubic centimeters of blood from which clear serum is withdrawn and then heated in a water bath to 55° for one-half hour. This treated rabbit's serum contains amboceptor, and is diluted with 0.85 per cent. salt solution so that 0.25 cubic centimeter of this dilution will hemolyze 0.5 cubic centimeter of a 5 per cent. suspension of sheep's corpuscles. In the Wassermann test twice this quantity, or 0.5 cubic centimeter of the diluted am-

boceptor, is used. Small quantities of the rabbit's serum is diluted from time to time as needed.

5. *Sensitized Cells.* — Sensitized cells consist of equal parts of a 5 per cent. suspension of washed sheep's corpuscles and diluted amboceptor. This mixture is incubated in a water bath at 37° C. for one-half hour to sensitize the cells (5 per cent. suspension of washed sheep's corpuscles). One cubic centimeter is used in the test.

6. *Antigen-Complement Mixture.* — The antigen-complement mixture consists of a mixture of the diluted antigen, salt solution and complement. As an example of the method of effecting this dilution the following is given when eight specimens are to be examined. Inasmuch as a slight excess of the reagents is necessary it is advisable to figure for ten instead of eight specimens. Suppose the amount of the antigen to be used for each test is 0.1 cubic centimeter of the diluted alcoholic extract (one part cholesterinized alcoholic extract plus four parts of saline), we will proceed as follows: —

10 (number of specimens) × 0.1 c. c. (amount of reagent used in single test) = 1.0 c. c. of diluted antigen.
10 (number of specimens) × 0.5 c. c. (amount of reagent used in single test) = 5.0 c. c. of complement. (Add salt solution sufficient to make total 10 c. c.)

In the tabulated sheets which outline titration of reagents, each square represents a test tube approximately 5 inches long and five-eighths inch in diameter, into which the reagents are measured with pipettes suitable for the purpose. The sizes used in this laboratory are 0.5 cubic centimeter, 1 cubic centimeter, 5 cubic centimeter and 10 cubic centimeter pipettes, each graduated in tenths.

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[1] The complement titer in the example being 0.5 cubic centimeter of a 5 per cent. solution, therefor 2 units, or 0.5 cubic centimeter of a 10 per cent. solution, are used for each tube.

*Titration of Amboceptor.*[1]

| | | | | |
|---|---|---|---|---|
| Amb. (1:500) .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.5 c. c. | Comp. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.5 c. c. | Cells .5 c. c.<br>Sal. 2.0 c. c. | | |
| Amb. (1:500) .5 c. c.<br>Comp. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.0 c. c. | Amb. (1:1000) .5 c. c.<br>Comp. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.0 c. c. | Amb. (1:1500) .5 c. c.<br>Comp. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.0 c. c. | Amb. (1:2000) .5 c. c.<br>Comp. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.0 c. c. | Amb. (1:5000) .5 c. c.<br>Comp. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.0 c. c. |

Incubate one hour at 37° C. For final titration make dilutions differing by 100 between the limits of complete and partial hemolysis. The highest dilution showing complete hemolysis contains the unit. Two units are used in the tests. When the preliminary titration is above 1:4000 it is better to dilute a part of the stock amboceptor so that its strength will be about 1:2000, and then make the final titration as above directed.

---

[1] To make the amboceptor dilution proceed as follows: —

Take 0.1 c. c. of inactivated immune rabbit's serum (see page 376) and add 9.9 c. c. of 0.85 per cent. salt solution. This makes a dilution of 1:100, — the so-called basic dilution.

0.1 c. c. of 1:100 plus 0.4 c. c. saline = 1:500 dilution.
0.1 c. c. of 1:100 plus 0.9 c. c. saline = 1:1000 dilution.
0.1 c. c. of 1:100 plus 1.4 c. c. saline = 1:1500 dilution.
0.1 c. c. of 1:100 plus 1.9 c. c. saline = 1:2000 dilution.
0.1 c. c. of 1:100 plus 2.4 c. c. saline = 1:2500 dilution.
0.1 c. c. of 1:100 plus 2.9 c. c. saline = 1:3000 dilution.
0.1 c. c. of 1:100 plus 3.4 c. c. saline = 1:3500 dilution.
0.1 c. c. of 1:100 plus 3.9 c. c. saline = 1:4000 dilution.
0.1 c. c. of 1:100 plus 4.4 c. c. saline = 1:4500 dilution.
0.1 c. c. of 1:100 plus 4.9 c. c. saline = 1:5000 dilution.

Five-tenths (0.5 c. c.) of each of these dilutions is pipetted into the test tubes as indicated in the table.

*Combined Titration of Complement, Amboceptor and Antigen.*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Comp. .5 c. c.<br>Amb. .5 c. c.<br>Cells .5 c. c.<br>Ant. .5 c. c.<br>Sal. .5 c. c. | Comp. .4 c. c.<br>Amb. .5 c. c.<br>Cells .5 c. c.<br>Ant. .5 c. c.<br>Sal. .6 c. c. | Comp. .3 c. c.<br>Amb. .5 c. c.<br>Cells .5 c. c.<br>Ant. .5 c. c.<br>Sal. .7 c. c. | Comp. .2 c. c.<br>Amb. .5 c. c.<br>Cells .5 c. c.<br>Ant. .5 c. c.<br>Sal. .8 c. c. | Comp. .1 c. c.<br>Amb. .5 c. c.<br>Cells .5 c. c.<br>Ant. .5 c. c.<br>Sal. .9 c. c. | Comp. 1.0 c. c.<br>Amb. .4 c. c.<br>Cells .5 c. c.<br>Ant. .5 c. c.<br>Sal. .1 c. c. | Comp. 1.0 c. c.<br>Amb. .3 c. c.<br>Cells .5 c. c.<br>Ant. .5 c. c.<br>Sal. .2 c. c. | Comp. 1.0 c. c.<br>Amb. .2 c. c.<br>Cells .5 c. c.<br>Ant. .5 c. c.<br>Sal. .3 c. c. | Comp. 1.0 c. c.<br>Amb. .1 c. c.<br>Cells .5 c. c.<br>Ant. .5 c. c.<br>Sal. .4 c. c. |
| Comp. 1.0 c. c.<br>Cells .5 c. c.<br>Sal. 1.0 c. c. | Amb. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.5 c. c. | Cells .5 c. c.<br>Sal. 2.0 c. c. | | | | | | |
| Comp. .5 c. c.<br>Amb. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.0 c. c. | Comp. .4 c. c.<br>Amb. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.1 c. c. | Comp. .3 c. c.<br>Amb. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.2 c. c. | Comp. .2 c. c.<br>Amb. .5 c. c.<br>Cells .5 c. c.<br>Sal. 1.3 c. c. | Comp. .1 c. c.<br>Amb. 5 c. c.<br>Cells .5 c. c.<br>Sal. 1.4 c. c. | Comp. 1.0 c. c.<br>Amb. .4 c. c.<br>Cells .5 c. c.<br>Sal. .6 c. c. | Comp. 1.0 c. c.<br>Amb. .3 c. c.<br>Cells .5 c. c.<br>Sal. .7 c. c. | Comp. 1.0 c. c.<br>Amb. .2 c. c.<br>Cells .5 c. c.<br>Sal. .8 c. c. | Comp. 1.0 c. c.<br>Amb. .1 c. c.<br>Cells .5 c. c.<br>Sal. .9 c. c. |

This titration is made before testing any series of specimens.

*Complement.* — To prepare 'complement for titration, add 7.00 cubic centimeters normal salt solution to 7.00 cubic centimeters of 10 per cent. guinea pig serum diluted with normal salt.

*Amboceptor.* — This is diluted amboceptor which contains two units in 0.5 cubic centimeter.

*Antigen.* — One cubic centimeter of a cholesterinized alcoholic extract of human heart is diluted with 4.00 cubic centimeters of salt solution. This cholesterinized suspension is again diluted with salt solution so that there is contained in 0.5 cubic centimeter the amount of antigen used in testing unknown serums. The row of tubes containing antigen serves as a check against using an antigen mixture in the subsequent tests which is anticomplementary. Incubate for one-half hour at 37° C.

*Reading.* — The tube in the front row containing the least number of tenths of a cubic centimeter of complement that causes complete hemolysis contains the unit. Two units, or an equal number of tenths of a cubic centimeter of 10 per cent. complement, are used in the test. When the system is suitable for testing the tube containing 0.3 cubic centimeter of amboceptor should be completely hemolyzed, and the one containing 0.2 cubic centimeter moderately hemolyzed.

## *Test for Anticomplementary and Natural Hemolytic Properties in Antigen.*

### *Test for Natural Hemolytic Properties.*

| | | | | | | |
|---|---|---|---|---|---|---|
| Ant.[1] 1.0 c. c.<br>Comp. 2 units<br>Cells .5 c. c.<br>+<br>Sal. qs 2.5 c. c. | Ant.[1] .8 c. c.<br>Comp. 2 units<br>Cells .5 c. c.<br>+<br>Sal. qs 2.5 c. c. | Ant.[1] .6 c. c.<br>Comp. 2 units<br>Cells .5 c. c.<br>+<br>Sal. qs 2.5 c. c. | Ant.[1] .4 c. c.<br>Comp. 2 units<br>Cells .5 c. c.<br>+<br>Sal. qs 2.5 c. c. | Ant.[1] .2 c. c.<br>Comp. 2 units<br>Cells .5 c. c.<br>+<br>Sal. qs 2.5 c. c. | Ant.[1] .1 c. c.<br>Comp. 2 units<br>Cells .5 c. c.<br>+<br>Sal. qs 2.5 c. c. | Ant.[1] .05 c. c.<br>Comp. 2 units<br>Cells .5 c. c.<br>+<br>Sal. qs 2.5 c. c. |

### *Test for Anticomplementary Properties.*

| | | | | | | |
|---|---|---|---|---|---|---|
| Ant.[1] 1.0 c. c.<br>Comp. 2 units<br>+<br>Sal. qs 1.5 c. c. | Ant.[1] .8 c. c.<br>Comp. 2 units<br>+<br>Sal. qs 1.5 c. c. | Ant.[1] .6 c. c.<br>Comp. 2 units<br>+<br>Sal. qs 1.5 c. c. | Ant.[1] .4 c. c.<br>Comp. 2 units<br>+<br>Sal. qs 1.5 c. c. | Ant.[1] .2 c. c.<br>Comp. 2 units<br>+<br>Sal. qs 1.5 c. c. | Ant.[1] .1 c. c.<br>Comp. 2 units<br>+<br>Sal. qs 1.5 c. c. | Ant.[1] .05 c. c.<br>Comp. 2 units<br>+<br>Sal. qs 1.5 c. c. |

Add sensitized cells to each tube in this row after incubating forty minutes.

Incubate one hour at 37° C. An available antigen contains no natural hemolytic properties in one-half the amount or in twice the amount to be employed in the test, while the degree of anticomplementary reaction is variable. A maximum of one-half the largest amount causing no inhibition may be used in testing unknown serums.

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[1] Antigen is an alcoholic extract of human heart saturated at room temperature with cholesterin and then diluted in the proportion of 1 part of the antigen plus 4 parts of salt solution.

## *Routine Wassermann Test.*

| | | | | | |
|---|---|---|---|---|---|
| Pos. Ser. .2 c. c.<br>Comp. 2 units<br>Sal. qs 1.0 c. c. | Doub. Ser. .2 c. c.<br>Comp. 2 units<br>Sal. qs 1.0 c. c. | Neg. Ser. .2 c. c.<br>Comp. 2 units<br>Sal. qs 1.0 c. c. | Unk. Ser. .2 c. c.<br>Comp. 2 units<br>Sal. qs 1.0 c. c. | Unk. Sp. Fl. 1.0 c. c.<br>Comp. 2 units | |
| Pos. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. C. .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Doub. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. C. .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Neg. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. C. .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Unk. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. C. .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Unk. Sp. Fl. 1.0 c. c.<br>Comp. 2 units<br>Ant. C. .X c. c.<br>- - | Antigen Control<br>Comp. 2 units<br>Ant. C. 2(.X c. c.)<br>+<br>Sal. qs 1.5 c. c. |
| Pos. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. B. .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Doub. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. B. .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Neg. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. B. .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Unk. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. B. .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Unk. Sp. Fl. 1.0 c. c.<br>Comp. 2 units<br>Ant. B. .X c. c.<br>- - | Antigen Control<br>Comp. 2 units<br>Ant. B. 2(.X c. c.)<br>+<br>Sal. qs 1.5 c. c. |
| Pos. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. A.[1] .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Doub. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. A.[1] .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Neg. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. A.[1] .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Unk. Ser. .1 c. c.<br>Comp. 2 units<br>Ant. A.[1] .X c. c.<br>+<br>Sal. qs 1.0 c. c. | Unk. Sp. Fl. 1.0 c. c.<br>Comp. 2 units<br>Ant. A.[1] .X c. c.<br>- - | Antigen Control<br>Comp. 2 units<br>Ant. A.[1] 2(.X c. c.)<br>+<br>Sal. qs 1.5 c. c. |

First pipette the serums and spinal fluids in the amounts indicated in the protocol; then mix antigen, salt solution and complement together so that each tube will receive 1.0 cubic centimeter of the mixture. (See page 377 of the test for the method of computing the amounts to be used.)

Incubate at 37° C. for forty minutes and add 1.0 cubic centimeter of sensitized cells to each tube. The results are read after one hour of further incubation at 37° C. Complete or moderate inhibition 4 hemolysis = *positive*. Slight inhibition = *doubtful*. Complete hemolysis = *negative*.

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[1] Antigen A is the standardized cholesterinized alcoholic extract of human heart supplied by the State Wassermann Laboratory. Antigens B and C are those prepared by the individual laboratory.

# THE COMMONHEALTH.

MONTHLY BULLETIN OF THE MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

*Sent Free to any Citizen of the State.*

MERRILL E. CHAMPION, M.D., DIRECTOR OF DIVISION OF HYGIENE, EDITOR.
Room 546, State House, Boston, Mass.

*Peace Problems.* — Now that the war seems practically over, many persons, it is to be feared, will feel that relaxation of the efforts put forth last year is permissible. To a certain degree, fortunately, this will be true. It would be a calamity, however, if any let-up should occur in our health campaign.

War merely accentuates our problems or adds to them; the fundamental factors influencing the public health are the same in peace as in war. Thousands of babies will continue to die every year in Massachusetts unless the public as a whole take more intelligent interest in the welfare of our children than is the rule at present. There will be just as much need as there was last year for better medical school inspection, because we have just as much need in peace time as in war time for healthy children and healthy adults. The draft showed us that many men, because of defects neglected in childhood, were inefficient as fighters; these same defects prevent them from doing their physical or mental best in solving peace-time problems.

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*Health Drives.* — The Department wishes again to offer its educational facilities to those interested. We all recognize that many people feel at the present moment as if they had been "talked to death" during the past year or two. Appeals of all sorts have been necessary and have been met with more or less cheerfulness, but now a rest is hoped for.

Nevertheless, we must still preach the laws of good health. For the individual to enjoy to the full his constitutional right to the blessings of liberty and the pursuit of happiness he must be as free from the tyranny of poor health as from the tyranny of political or military autocracy. Consequently, parent-teacher associations, clubs and organizations of all kinds interested in the welfare of the community are urged to place health discussions as frequently as possible upon their programs for the winter.

# NOTE ON PNEUMOCOCCUS TYPE DETERMINATION IN CASES OF INFLUENZA PNEUMONIA.

By Edith A. Beckler, Bacteriologist, Massachusetts State Department of Health.

During the influenza epidemic 189 specimens of sputum from cases of pneumonia following influenza were examined at the Diagnostic Laboratory. Forty-six per cent. of these showed no pneumococci. The predominating organisms of this group were streptococci. *B. influenzæ* was found in a relatively small number.

One hundred specimens showed pneumococci. The distribution of type is shown in the following table: —

| | Per Cent. |
|---|---|
| Type I., | 3 |
| Type II. (including subgroups), | 10 |
| Type III., | 34 |
| Type IV., | 53 |

This incidence is not very different from the distribution of types in the mouths of healthy persons. According to investigations carried on at Rockefeller Institute, the types were found as follows in 116 normal persons harboring pneumococci: —

| | Per Cent. |
|---|---|
| Type I., | .8 |
| Type II. (including subgroups), | 18.2 |
| Type III., | 28.1 |
| Type IV., | 52.9 |

Type III., although the most virulent, normally causes the smallest percentage of cases, usually 10 to 13 per cent. In the recent epidemic Type III. appeared to play a more important rôle than usual. Lowered vital resistance following influenza might account for this.

Our results seem to indicate that the influenza pneumonias, when caused by pneumococci, were due principally to auto infection.

# DIET SLIPS.

## Diet Slip No. 1. — Diet for Baby from Birth to Twelve Months.

The best food for the baby is breast milk.
The best substitute for breast milk is modified cow's milk.
If the baby cannot have breast milk consult a doctor and follow his directions.
Be regular in feeding the baby.
Do not feed the baby between meals.
Give the baby *cool* not *cold* boiled water between meals.

*Time-table for feeding Normal Infants.*

| Age. | Day Feedings. | Night Feedings. |
|---|---|---|
| Second to seventh day, | Every two hours, | Two. |
| Second to third week, | Every three hours, | Two. |
| Fourth to sixth week, | Every three hours, | Two. |
| Seventh week to three months, | Every three hours, | Two. |
| Third to fifth months, | Every three hours, | One. |
| Fifth to seventh months, | Every three hours, | One. |
| Seventh to twelfth months, | Every four hours, | One. |

*Foods Other than Milk for Baby.*

*Six Months.* — In addition to breast milk or modified cow's milk give the baby 1 to 3 teaspoonfuls of strained fruit juice between the morning feedings. Fruit juices allowed: orange, prune and cooked apple juice.

*Eight Months.* — Gruel or strained cereal (well-cooked), 2 to 3 tablespoonfuls, may be given with morning feeding.

*Nine Months.* — Increase strained fruit juice to 2 to 3 tablespoonfuls. Give between morning feedings. Fruit juices allowed: orange, prune and cooked apple juice.

*Ten to Twelve Months.* — Broth made from chicken, lamb or beef, beef juice, 1 tablespoonful at first, gradually increasing to 8 tablespoonfuls; yolk of soft-cooked egg, and, if teeth have appeared, a small piece of crisp dry bread or toast or rusk may be added to the diet. Give at second morning feeding. Broth and egg should be given on alternate days.

Average weight for child at twelve months, 20 to 21 pounds.

*Note.*

3 teaspoonfuls = 1 tablespoonful.
2 tablespoonfuls = 1 ounce.
16 tablespoonfuls = 1 cup.
1 cup = 8 ounces.
All measurements should be level.

## DIET SLIP NO. 2. — DIET FOR CHILD FROM TWELVE MONTHS TO END OF SECOND YEAR.

Average weight for child at twelve months, 20 to 21 pounds.

Normal child should be weaned by end of ten months.

A quart of milk a day should form the basis of the diet.

Introduce new foods carefully.

Keep flies away from the baby's food.

Keep milk clean, cold and covered.

Cook all cereals from two to three hours over water. Do not give the same kind of cereal every day.

*Twelve Months.* — Four meals, 6.30 A.M., 10 A.M., 2 P.M. and 6 P.M.

Foods allowed: Milk, well-cooked, strained cereals, yolk of egg, broths from chicken, beef or mutton, crisp, dry bread, toast or crackers, fruit juices.

6.30 A.M. 1 cup of warm milk; 3 tablespoonfuls of thoroughly cooked, strained cereal jelly without sugar (oatmeal, farina, cream of wheat, barley, arrowroot, natural brown rice).

8.00 A.M. 1 to 3 tablespoonfuls of strained fruit juice (orange, prune, cooked apple, fresh ripe peach, fresh ripe raspberries).

10.00 A.M. 1 cup of warm milk; 1 rusk or slice of crisp, dry toast.

2.00 P.M. 1 cup of warm milk; yolk of soft-cooked egg with one slice of dry toast, or ½ cup of broth (beef, mutton or chicken, with 1 tablespoonful of strained natural brown rice or barley), or ¼ cup of beef juice with one slice of stale bread or dry toast.

6.00 P.M. 1 cup of warm milk; 2 to 4 tablespoonfuls of strained cereal jelly (use a different kind from morning cereal).

*Fifteenth Month.* — Four meals, 6.30 A.M., 10 A.M., 2 P.M., and 6 P.M.

Foods allowed: Milk, eggs lightly cooked, broths from beef, mutton or chicken, cereals thoroughly cooked (unstrained), natural brown unpolished rice, macaroni, spaghetti, vegetables, including thoroughly cooked baked mealy potato, strained spinach, asparagus, peas, young beets and carrots. Dry bread, crisp toast, rusks. Fruit juices (orange, prune, cooked apples, fresh ripe peach, fresh ripe raspberries).

6.30 A.M. 1 cup of warm milk.

8.00 A.M. 1 to 3 tablespoonfuls of fruit juice (see above).

10.00 A.M. 2 to 3 tablespoonfuls of unstrained, thoroughly cooked cereals, with ¼ cup of milk (no sugar); 1 slice of dry toast; 1 cup of warm milk.

2.00 P.M.

(1) 1 cup of warm milk.

(2) 1 soft-cooked egg, or 1 to 3 teaspoonfuls of scraped, rare beef, or ½ cup of mutton or chicken broth.

(3) 1 small mealy baked potato, or 2 tablespoonfuls of thoroughly cooked natural brown rice, or 2 tablespoonfuls of thoroughly cooked macaroni or spaghetti.

(4) 1 tablespoonful of spinach, asparagus, young carrots or young peas.

(5) 1 slice of dry toast or rusk.

6.00 P.M. 3 to 4 tablespoonfuls of cereal or well-cooked natural brown rice, or 2 slices of dry bread, or 1 cup of warm milk.

*Eighteen Months to End of Second Year.* — Four meals, 6.30 A.M., 10 A.M., 2 P.M. and 6 P.M.

Foods allowed: Same as in list for fifteenth month, with following additions: Strained fruit pulp, such as baked apple, apple sauce or prune pulp, may be given, 1 to 2 tablespoonfuls at a time in place of fruit juices, or for dessert at dinner. Eggs may be served in form of omelets, coddled eggs or poached, but never fried or hard cooked. (One to 2 tablespoonfuls of minced beef, chicken, lamb or mutton may be given once a day in place of egg.) Simple desserts, such as junket, baked or boiled custard, thoroughly cooked cornstarch pudding, Irish blanc mange, rice or cereal puddings without raisins. One teaspoonful of butter may be given daily on the toast.

*Note.* — Whenever possible vegetables should be baked or steamed. When cooked in water the water should be used, as it contains valuable food material. The green vegetable and milk given at noon may be served together, in form of a cream soup. Water should be given freely between meals.

Average weight of child at end of second year, 32 pounds.

*Note.*

3 teaspoonfuls = 1 tablespoonful.
2 tablespoonfuls = 1 ounce.
16 tablespoonfuls = 1 cup.
1 cup = 8 ounces.
All measurements should be level.

## DIET SLIP NO. 3. — DIET FOR CHILD FROM THREE TO SIX YEARS.

Be regular in feeding the child.

Three meals a day are generally sufficient, 7.30 A.M., 2 P.M. and 6 P.M. (A light luncheon may be given at 10.30 A.M.)

Foods allowed: For list, see Bulletin, "Food for Children from Two to Six Years," issued by the Massachusetts State Department of Health.

7.30 (breakfast). 4 tablespoonfuls of apple sauce or prune pulp; well-cooked cereal with $\frac{1}{4}$ cup of milk; 1 cup of milk or weak cocoa; 2 slices of dry toast with butter.

10.30 A.M. (mid-morning luncheon if desired). One cup of milk with one or two rusks.

2.00 P.M. (dinner).

(1) Egg lightly cooked, or 2 tablespoonfuls of finely minced rare roast beef, beefsteak or lamb chop, or 1 cup of strained dried pea or bean soup.
(2) Baked potato or natural brown rice or macaroni or spaghetti.
(3) 2 tablespoonfuls of mashed spinach, asparagus, young beets, young carrots, young beans, young peas.
(4) Simple pudding (baked custard, cornstarch, rice, tapioca or sago).
(5) 1 cup of milk (milk and vegetables may be combined in form of soup).

6.00 P.M. (supper).

(1) Bread and milk, or cereal and milk; or cream toast, or cream soup with slice of toast and butter.

(2) Stewed fruit, junket or baked custard with small piece of sponge cake or plain cookie. Water should be given freely between meals.

Average weight of child at beginning of third year, 32 pounds; fourth year, 36 pounds; fifth year, 40 pounds.

Child should gain on an average of 4 pounds each year from age of three to six years.

# RÉSUMÉ OF COMMUNICABLE DISEASES FOR OCTOBER, 1918.

## GENERAL PREVALENCE.

During the month of October there were reported to this department 6,888 cases of communicable diseases. The total number of cases for September, 1918, was 6,745, while for October, 1917, 4,286 cases were reported. Our case rate per 100,000 population was as follows: October, 1918, 175.7; September, 1918, 172.0; October, 1917, 111.4. The increase in the number of reported cases for this month was due entirely to the large number of cases of lobar pneumonia, which without doubt had their origin in influenzal infection.

*Diphtheria.* — The usual increase of diphtheria expected for this month did not materialize. As a rule, with the more intimate association of children during the school sessions there appears annually an increase in the number of reported cases of diphtheria. The total for October, 1918, was 409, a case rate of 10.4, as compared with 1,152 cases of October, 1917, with a case rate of 29.9 per 100,000 population.

*Lobar Pneumonia.* — The total number of lobar pneumonia cases reached the high total of 3,797 cases in October, 1918, an increase of 683 cases over September, while the increase in cases over October, 1917, is 3,645. These increases are due primarily to the influenza outbreak, which became prevalent early in September and continued through October. The monthly average for the eight months preceding September of this year was 580 cases.

*Measles.* — The number of cases of measles reported for the month was 318, an increase of 55 cases over 263 reported in September.

*Scarlet Fever.* — Scarlet fever was reported in 226 instances. The cases, however, were scattered throughout the State, and no outbreak of any size occurred. The total number of cases reported was 226 for the month of October, as compared with 177 for September.

*Typhoid Fever.* — The total of 100 cases of typhoid fever reported is surprisingly low for this season of the year, and very likely does not present the true picture of the situation. It may be possible that with the pandemic of influenza raging there were quite a number of true typhoid cases not recognized or confused in diagnosis with influenza.

There are grounds for belief, however, that the conscientious work of the local boards of health, with the assistance of the district health officers, in picking out healthy carriers of typhoid, particularly those handling food, is about to bear good results in reducing our case rate in this disease. To effect a continued reduction in typhoid infection efforts must be extended along this line of detecting carriers, together with persistent attempts to vaccinate all known contacts with typhoid vaccine.

*Venereal Diseases.* — A slight decrease in the number of reported cases has been shown this month. There were 552 cases of gonorrhœa reported for October, as compared with 669 for September, and 233 cases of syphilis, as compared with 298 for September.

*Influenza.* — The influenza pandemic which has existed in this State for the past six weeks is now rapidly disappearing. It may be of interest to note the following facts: —

The advent of influenza in epidemic form occurred among the sailors and soldiers on or about August 26, and, because of its marked contagiousness, rapidly spread to the civilian community.

Quincy, Brockton, Boston and Revere seem to have been the earliest cities affected, and the whole eastern section of the State rapidly became involved.

The outbreak apparently followed the usual lines of travel, and the central and western sections became involved at later dates.

That the local boards of health might have the usual police power that is associated with a reportable disease, and that our information might be more complete, the Public Health Council made influenza reportable October 4.

The incidence of the disease seems to vary in reports received from various localities. Boston's cases have been estimated by Dr. Woodward, Commissioner of Health for Boston, as 200,000, with over 4,200 deaths. Lowell's survey, made by school teachers in a house to house canvass, showed approximately 12,000 cases, 9 per cent. of the population. It would appear, from our available figures, that there were perhaps 300,000 cases in the State, with a mortality not exceeding 5 per cent.

## OUTBREAKS.

Typhoid fever appeared as a mild outbreak in Beverly, where a total of 30 cases developed. The source of infection was traced to a New Hampshire milk dealer. His milk was discontinued and the outbreak quieted down.

Gloucester's outbreak of 6 cases was definitely proven to be due to a milkman who, with a positive Widal and stool, is established as a healthy carrier. With this milk excluded from sale the outbreak is at an end.

The only other outbreak of importance occurred in Wilmington with 8 cases.

One case of leprosy was discovered in Boston this month. The patient has been removed to Penikese Island for treatment.

## RARE DISEASES.

*Anterior poliomyelitis* was reported from Boston, 3; Malden, 1; Quincy, 1; Northampton, 1; Hadley, 1; total, 7.

*Dog bite requiring antirabic treatment* was reported from Worcester, 1; Ware, 1; total, 2.

*Dysentery* was reported from Sutton, 3.

*Epidemic cerebrospinal meningitis* was reported from Mansfield, 1; Cambridge, 2; Camp Devens, 8; Springfield, 1; Chelsea, 4; Chicopee, 1; Lawrence, 1; Natick, 1; Fall River, 1; Watertown, 1; Boston, 8; Andover, 1; Greenfield, 1; Boxford, 1; total, 32.

*Malaria* was reported from Erving, 3; Natick, 1; total, 4.

*Pellagra* was reported from Boston, 1; Waltham, 1; total, 2.

*Leprosy* was reported from Boston, 1.

*Septic sore throat* was reported from Fall River, 1; Haverhill, 1; Hull, 1; Boston, 1; total, 4.

*Tetanus* was reported from Lawrence, 1; Boston, 2; Worcester, 1; total, 4.

*Trachoma* was reported from Boston, 3; Chelsea, 1; total, 4.

## DISTRIBUTION.

### *All Communicable Diseases.*

| | September, 1918. | October, 1918. | October, 1917. |
|---|---|---|---|
| Total cases, | 6,745 | 6,888 | 4,286 |
| Case rate per 100,000 population, | 172.0 | 175.7 | 111.4 |

### *Certain Prevalent Diseases.*

| | September, 1918. | October, 1918. | October, 1917. |
|---|---|---|---|
| Diphtheria: — | | | |
| Total cases, | 430 | 409 | 1,152 |
| Case rate per 100,000 population, | 11.0 | 10.4 | 29.9 |
| Lobar pneumonia: — | | | |
| Total cases, | 3,114 | 3,797 | 152 |
| Case rate per 100,000 population, | 79.4 | 96.8 | 3.9 |
| Measles: — | | | |
| Total cases, | 263 | 318 | 589 |
| Case rate per 100,000 population, | 6.7 | 8.1 | 15.3 |
| Scarlet fever: — | | | |
| Total cases, | 177 | 226 | 440 |
| Case rate per 100,000 population, | 4.5 | 5.8 | 11.4 |
| Typhoid fever: — | | | |
| Total cases, | 261 | 100 | 246 |
| Case rate per 100,000 population, | 6.7 | 2.6 | 6.4 |
| Whooping cough: — | | | |
| Total cases, | 543 | 333 | 236 |
| Case rate per 100,000 population, | 13.9 | 8.5 | 6.1 |
| Tuberculosis, pulmonary: — | | | |
| Total cases, | 588 | 468 | 687 |
| Case rate per 100,000 population, | 15.0 | 11.9 | 17.8 |
| Tuberculosis, other forms: — | | | |
| Total cases, | 49 | 25 | 53 |
| Case rate per 100,000 population, | 1.2 | 0.6 | 1.4 |

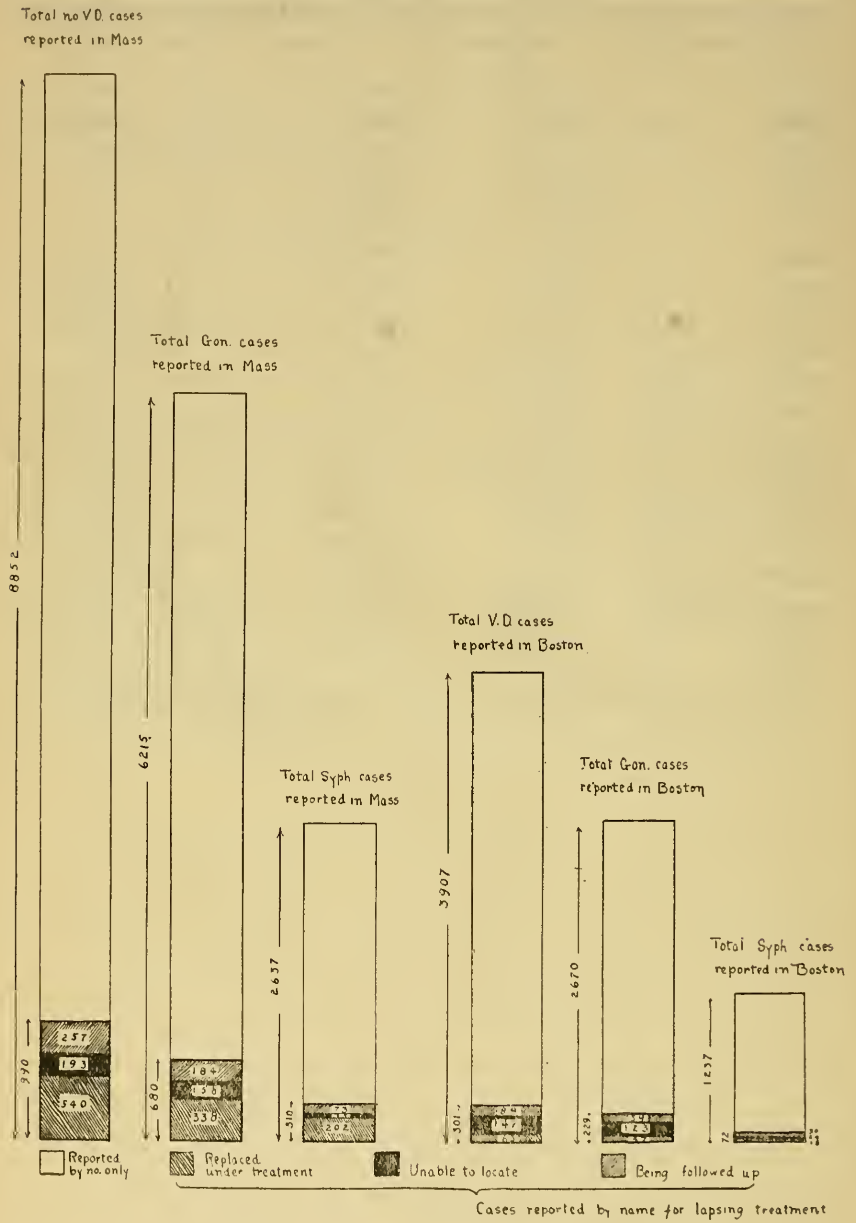
# OCCUPATIONAL DISEASES REPORTED BY THE STATE BOARD OF LABOR AND INDUSTRIES.

| DISEASE. | Occupation. | Locality. | Sex. | Age. | Color. |
|---|---|---|---|---|---|
| Aniline, . . . . . | Chemical work, . . | Hanson, . . . . | M | 38 | W |
| Aniline, . . . . . | Laborer, . . . . | Hanson, . . . . | M | 35 | C |
| Aniline, . . . . . | Laborer, . . . . | Hanson, . . . . | M | 36 | C |
| Aniline, . . . . . | Laborer, . . . . | Hanson, . . . . | M | 20 | W |
| Aniline, . . . . . | Laborer, . . . . | Hanson, . . . . | M | 54 | C |
| Aniline, . . . . . | Laborer, . . . . | Hanson, . . . . | M | 64 | W |
| Aniline, . . . . . | Laborer, . . . . | Hanson, . . . . | M | 50 | W |
| Brass, . . . . . . | Munition, . . . | Boston, . . . . | F | 20 | W |
| Dintro-benzol dermatitis, . | Carpenter, . . | Hanson, . . . . | M | 44 | W |
| Dintro-benzol dermatitis, . | Chemical work, . | Hanson, . . . . | M | 40 | W |
| Dintro-benzol dermatitis, . | Laborer, . . . . | Hanson, . . . . | M | 50 | W |
| Dintro-benzol dermatitis, . | Steamfitter, . . | Hanson, . . . . | M | 38 | W |
| Lead poisoning, . . . | Storage battery, . | Readville, . . . . | M | 42 | W |
| Nitro-benzol dermatitis, . | Laborer, . . . . | Hanson, . . . . | M | 37 | W |
| Nitro-benzol dermatitis, . | Laborer, . . . . | Hanson, . . . . | M | 26 | W |
| Nitro-benzol dermatitis, . | Laborer, . . . . | Hanson, . . . . | M | 40 | W |
| Nitro-benzol dermatitis, . | Steamfitter, . . | Hanson, . . . . | M | 40 | W |
| Nitro-benzol dermatitis, . | Storekeeper, . . | Hanson, . . . . | M | 65 | W |
| Sulphuric acid, . . . | Laborer, . . . . | Hanson, . . . . | M | 32 | W |

# DIAGRAM SHOWING VENEREAL DISEASE REPORTS TO NOV. 1, 1918

MASSACHUSETTS — VENEREAL DISEASES MADE REPORTABLE FEB 1, 1918 — BOSTON

FIRST CASES REPORTED FEB. 18



## REPORT UPON THE WORK OF THE BACTERIOLOGICAL LABORATORY FOR THE MONTH OF OCTOBER, 1918.

The following gives the number of bacteriological examinations made in the laboratory of the State Department of Health during the month of October, 1918: —

| | Number of Examinations. | Diagnosis. | | Release. | |
|---|---|---|---|---|---|
| | | Positive. | Negative. | Positive. | Negative. |
| Diphtheria, | 775 | 70 | 518 | 59 | 128 |

| | Number of Examinations. | Positive. | Negative. | *Atypical. |
|---|---|---|---|---|
| Tuberculosis, | 238 | 43 | 195 | |
| *Typhoid fever (Widal test), | 162 | 51 | 104 | 7 |
| Typhoid fever (culture test), | 43 | 2 | 41 | |
| Malaria, | 5 | – | 5 | |
| Gonorrhœa, | 172 | 18 | 152 | |
| Miscellaneous, | 221 | – | – | |

Total number of examinations, 1,617.

## REPORT OF DIVISION OF FOOD AND DRUGS.

During the month of October, 1918, samples were collected in 24 cities and towns.

There were 646 samples of milk examined, of which 92 were below the legal standard, 1 sample was skimmed milk above the legal standard, 1 sample was skimmed milk below, 1 sample of skimmed milk not marked, and 21 samples contained added water.

There were 133 samples of food examined, of which the following were adulterated: 3 samples of butter which had a bad odor; 8 samples of clams and 1 sample of scallops which were watered; 1 sample of cocoa, 2 samples of nuts, 25 samples of fish, all of which were decomposed; 23 samples of eggs which were sold as fresh eggs and were not fresh, and 16 samples of eggs bought as fresh eggs, but were cold storage not marked; 1 sample of cream below the legal standard; and 3 samples of vinegar low in acid.

There was 1 sample of proprietary drug examined, which was up to the standard.

The police departments submitted 1 sample of liquor and 8 samples of poisons for examination.

There were 9 convictions for violation of the laws, $320 in fines being imposed. James M. Cormick of Chelmsford, William R. Dean of Taunton, Charles P. Hyde and Nelson Hyde of Monterey, John Sckiripo of Dracut and Edward Younger of Gloucester were convicted for violation of the milk laws. James M. Cormick of Chelmsford appealed his case. George Kokenakes of Boston, on two counts, was convicted for violation of the food laws. Morris Atkins of Chelsea was convicted for violation of the cold-storage laws. He appealed his case.

There were 9 confiscations made, consisting of 300 pounds of decomposed frozen eggs, 200 pounds of decomposed frozen eggs, 620 pounds of decomposed butter, 29 pounds of decomposed fowl, 200 pounds of decomposed pigs' hocks, 5,192 pounds of decomposed salt fish, 75 pounds of decomposed salt fish, 2,128 pounds of maggoty and decomposed grapes, and 306 pounds of emaciated beef.

In accordance with the Acts of 1902, chapter 272, the following is the list of articles of adulterated food collected in original packages from manufacturers, wholesalers or producers: —

Ten samples of milk containing added water, produced by Frederick Bohenberger of Stoughton, and 2 samples of milk containing added water, produced by Edward D. Trainer of Medford.

The licensed cold-storage warehouses report the following amounts of food placed in storage during the month of September, 1918: 782,211 dozens of case eggs; 128,852 pounds of broken-out eggs; 2,547,082 pounds of butter; 705,118 pounds of poultry; 1,422 pounds of game; 6,296,167 pounds of fresh meat and fresh meat products; and 2,343,028 pounds of fresh food fish.

There was on hand in storage on Oct. 1, 1918, 16,369,697 dozens of case eggs, 499,212 pounds of broken-out eggs, and 17,508,041½ pounds of butter.

A compilation of the quarterly reports on slaughtering for the quarter ending October 1 shows that during that period 26,760 animals were inspected by the local inspectors of slaughtering throughout the State. Of that number, 5,541 were cattle, 17,741 were calves, 2,643 were hogs, 832 were sheep and 3 were goats. In addition to a number of parts, which were condemned where it was not necessary to condemn the entire carcass, 322 animals were condemned. Of this number, 83 were cattle, 213 were calves, 24 were hogs and 2 were sheep. There were condemned 192 calves on account of immaturity; 76 animals on account of tuberculosis, of which 66 were cattle, 2 were calves and 8 were hogs; 12 hogs on account of hog cholera; 10 calves on account of weak condition; 3 cattle on account of pneumonia; 3 calves on account of diarrhœa; 4 animals on account of septicæmia, of which 2 were cattle and 2 were hogs; 5 animals on account of emaciation, of which 2 were cattle and 3 were calves; 7 animals on account of injuries, of which 4 were cattle, 1 was a calf and 2 were sheep. The remaining 10 animals were condemned on account of actinomycosis, enteritis, jaundice, abscesses, inflammation, fever, strangulation, because the inspector was not present at the time of slaughter, and because they died otherwise than by slaughter.

These figures as compared with the figures for the same period in 1917 show an increase in the total number of carcasses inspected amounting to 100. The cattle show an increase of about 300 and the calves show an increase of about 600, while the hogs show a decrease of about 700 and the sheep show a decrease of about 100. The condemnations of carcasses are considerably lower this year, there being but 322 condemned out of 26,760, while last year there were 397 condemned out of 26,672.

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | Cities and Towns grouped in Order of Population. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 1 | Massachusetts, . . . . | 3,920,988 | 63 | 1 | 430 | 35 | 18 | 12 | 14 | – | 3114 | 2293 | 263 | 15 |
| 2 | Cities over 200,000. | | | | | | | | | | | | | |
| 3 | Boston, . . . . . . | 793,471 | 20 | – | 127 | 11 | 9 | 4 | – | – | 485 | 682 | 22 | 1 |
| 4 | Cities, 150,000–200,000. | | | | | | | | | | | | | |
| 5 | Worcester, . . . . . . | 173,419 | 2 | – | 24 | 3 | – | – | – | – | 78 | 95 | 7 | 2 |
| 6 | Cities, 100,000–150,000. | *578,593* | *10* | – | *78* | *6* | *3* | *3* | *4* | – | *171* | *199* | *47* | *6* |
| 7 | Fall River, . . . . . . | 128,317 | 3 | – | 13 | 1 | – | – | 1 | – | 44 | 39 | 33 | 2 |
| 8 | New Bedford, . . . . . | 117,855 | – | – | 8 | 2 | – | 1 | 1 | – | 20 | 29 | – | – |
| 9 | Springfield, . . . . . . | 111,983 | 5 | – | 13 | – | 1 | 1 | 1 | – | 33 | 26 | 1 | – |
| 10 | Cambridge, . . . . . . | 111,379 | 2 | – | 14 | 2 | – | – | – | – | 64 | 65 | – | – |
| 11 | Lowell, . . . . . . . | 109,059 | – | – | 30 | 1 | 2 | 1 | 1 | – | 10 | 40 | 13 | 4 |
| 12 | Cities, 50,000–100,000. | *569,719* | *11* | *1* | *53* | *4* | *3* | *1* | *1* | – | *236* | *243* | *11* | *1* |
| 13 | Lynn, . . . . . . . | 99,952 | 1 | – | 9 | 1 | 1 | – | – | – | 34 | 40 | 3 | 1 |
| 14 | Lawrence, . . . . . . | 93,062 | – | – | 4 | 1 | 2 | 1 | – | – | 21 | 28 | 1 | – |
| 15 | Somerville, . . . . . . | 93,026 | 4 | – | 20 | 1 | – | – | – | – | 48 | 46 | – | – |
| 16 | Brockton, . . . . . . | 65,746 | 1 | – | 1 | – | – | – | – | – | 52 | 41 | – | – |
| 17 | Holyoke, . . . . . . | 62,796 | – | – | 3 | – | – | – | – | – | 1 | 2 | 1 | – |
| 18 | Haverhill, . . . . . . | 52,873 | 5 | 1 | 7 | 1 | – | – | – | – | 48 | 15 | 1 | – |
| 19 | Malden, . . . . . . | 51,798 | – | – | 5 | – | – | – | – | – | 6 | 42 | 2 | – |
| 20 | Chelsea, . . . . . . | 50,468 | – | – | 4 | – | – | – | 1 | – | 26 | 29 | 3 | – |
| 21 | Cities and Towns, 25,000–50,000. | *487,764* | *5* | – | *50* | *6* | *2* | *2* | *1* | – | *223* | *189* | *40* | *1* |
| 22 | Quincy, . . . . . . | 45,827 | – | – | 4 | – | – | – | – | – | 23 | – | 2 | – |
| 23 | Newton, . . . . . . | 45,234 | – | – | 4 | – | 1 | 1 | – | – | 11 | 15 | 1 | – |
| 24 | Pittsfield, . . . . . . | 44,410 | 3 | – | 2 | 1 | – | – | – | – | 7 | 7 | – | – |
| 25 | Salem, . . . . . . | 41,082 | – | – | 3 | 2 | 1 | 1 | – | – | 33 | 45 | 2 | – |
| 26 | Fitchburg, . . . . . . | 40,830 | 1 | – | 14 | 1 | – | – | 1 | – | 11 | 15 | 3 | – |
| 27 | Everett, . . . . . . | 40,435 | – | – | 2 | 1 | – | – | – | – | 15 | 24 | – | – |
| 28 | Taunton, . . . . . . | 37,381 | – | – | 2 | – | – | – | – | – | 1 | 10 | 1 | – |
| 29 | Brookline, . . . . . . | 37,147 | 1 | – | 3 | – | – | – | – | – | 81 | 21 | – | – |
| 30 | Medford, . . . . . . | 35,230 | – | – | 4 | – | – | – | – | – | 2 | 18 | 2 | – |
| 31 | Chicopee, . . . . . . | 33,177 | – | – | 3 | – | – | – | – | – | 1 | – | 1 | – |
| 32 | Waltham, . . . . . . | 31,643 | – | – | 3 | – | – | – | – | – | 8 | 16 | 28 | 1 |
| 33 | Revere, . . . . . . | 29,643 | – | – | 5 | 1 | – | – | – | – | 20 | 11 | – | – |
| 34 | Beverly, . . . . . . | 25,725 | – | – | 1 | – | – | – | – | – | 10 | 7 | – | – |
| 35 | Cities and Towns, 10,000–25,000. | *575,996* | *6* | – | *55* | *2* | – | *1* | – | – | *138* | *211* | *35* | *2* |
| 36 | Gloucester, . . . . . . | 24,529 | – | – | – | – | – | – | – | – | – | 28 | 1 | 1 |
| 37 | Northampton, . . . . . | 23,081 | 1 | – | 3 | – | – | – | – | – | 1 | – | – | – |
| 38 | North Adams, . . . . . | 22,045 | – | – | – | – | – | – | – | – | 2 | 2 | – | – |
| 39 | Peabody, . . . . . . | 20,489 | 2 | – | – | – | – | – | – | – | 8 | 7 | 3 | 1 |
| 40 | Attleboro, . . . . . . | 19,933 | – | – | – | – | – | – | – | – | 7 | 8 | – | – |
| 41 | Westfield, . . . . . . | 19,929 | 1 | – | 2 | 2 | – | – | – | – | 13 | 5 | 1 | – |
| 42 | Watertown, . . . . . . | 18,851 | – | – | 2 | – | – | – | – | – | 8 | 14 | – | – |
| 43 | Framingham, . . . . . | 17,728 | – | – | 1 | – | – | – | – | – | – | 3 | – | – |
| 44 | Leominster, . . . . . . | 17,688 | – | – | 4 | – | – | – | – | – | 1 | 3 | 17 | – |
| 45 | Melrose, . . . . . . | 17,627 | – | – | 1 | – | – | – | – | – | 9 | 10 | – | – |
| 46 | Gardner, . . . . . . | 17,451 | – | – | 5 | – | – | – | – | – | 4 | 4 | 1 | – |
| 47 | Arlington, . . . . . . | 17,264 | – | – | – | – | – | – | – | – | 3 | 13 | – | – |
| 48 | Woburn, . . . . . . | 17,116 | – | – | 2 | – | – | – | – | – | 2 | 5 | – | – |
| 49 | Marlborough, . . . . . | 15,680 | – | – | – | – | – | – | – | – | 1 | 4 | – | – |
| 50 | Methuen, . . . . . . | 15,649 | – | – | – | – | – | – | – | – | – | 1 | – | – |
| 51 | Newburyport, . . . . . | 15,542 | – | – | – | – | – | – | – | – | 2 | 10 | – | – |

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[1] Deaths are available for publication each month through the courtesy of the office of the Secretary addition and correction, these deaths, while approximately correct, are not absolutely complete.

# TO THE PUBLIC HEALTH,[1] SEPTEMBER, 1918.

| 38A Ophthalmia Neonatorum. | | 38B Suppurative Conjunctivitis. | | 75A Trachoma. | | 19C Mumps. | | 7 Scarlet Fever. | | 28-29 Tuberculosis, Pulmonary. | | 30-35 Tuberculosis, Other Forms. | | 1 Typhoid Fever. | | 38C Gonorrhœa. | | 37 Syphilis. | | 8 Whooping Cough. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| 92 | – | 25 | – | 6 | – | 80 | 1 | 177 | 4 | 573 | 393 | 49 | 58 | 261 | 26 | 565 | – | 218 | 20 | 543 | 108 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 2 |
| 25 | – | 11 | – | 2 | – | 18 | 1 | 28 | – | 199 | 105 | 16 | 14 | 22 | 5 | 267 | – | 113 | 3 | 117 | 31 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | 4 |
| 4 | – | 1 | – | 1 | – | – | – | 8 | – | 31 | 12 | – | 1 | 4 | – | 27 | – | 10 | 2 | – | – | 5 |
| *31* | – | *4* | – | *2* | – | *10* | – | *27* | *3* | *113* | *68* | *7* | *10* | *70* | *8* | *90* | – | *29* | *3* | *207* | *30* | 6 |
| 8 | – | 2 | – | – | – | 2 | – | 3 | – | 25 | 19 | 2 | 3 | 33 | 3 | 20 | – | 5 | – | 34 | 6 | 7 |
| 11 | – | 1 | – | – | – | 1 | – | 10 | 1 | 29 | 14 | – | – | 15 | 2 | 25 | – | 3 | – | 33 | 6 | 8 |
| 5 | – | 1 | – | 1 | – | 7 | – | 6 | – | 23 | 12 | 1 | 2 | 9 | 2 | 24 | – | 15 | 2 | 37 | 5 | 9 |
| 2 | – | – | – | 1 | – | – | – | 3 | – | 16 | 15 | 3 | 2 | 4 | – | 14 | – | 4 | – | 100 | 10 | 10 |
| 5 | – | – | – | – | – | – | – | 5 | 2 | 20 | 8 | 1 | 3 | 9 | 1 | 7 | – | 2 | 1 | 3 | 3 | 11 |
| *15* | – | *3* | – | *1* | – | *4* | – | *22* | *1* | *61* | *52* | *13* | *9* | *21* | *2* | *50* | – | *17* | – | *34* | *11* | 12 |
| 2 | – | – | – | – | – | – | – | 4 | – | 10 | 14 | 1 | – | 1 | 1 | 11 | – | 5 | – | 1 | 1 | 13 |
| 1 | – | – | – | – | – | – | – | – | – | 18 | 9 | 3 | 3 | 3 | – | 5 | – | 5 | – | 10 | 2 | 14 |
| 3 | – | – | – | – | – | – | – | 3 | – | 6 | 8 | 2 | 1 | – | – | 7 | – | 3 | – | 2 | 3 | 15 |
| 3 | – | 2 | – | – | – | – | – | 8 | – | 8 | 6 | 1 | 1 | 5 | 1 | 10 | – | 1 | – | 7 | 1 | 16 |
| 1 | – | – | – | – | – | 1 | – | 1 | – | 3 | 6 | – | 1 | 2 | – | 4 | – | 1 | – | – | 2 | 17 |
| 2 | – | 1 | – | – | – | 2 | – | 2 | – | 6 | 2 | 3 | 1 | 6 | – | 9 | – | 1 | – | 7 | 1 | 18 |
| – | – | – | – | – | – | 1 | – | 4 | 1 | 8 | 3 | 3 | 1 | 2 | – | 1 | – | 1 | – | 3 | 1 | 19 |
| 3 | – | – | – | 1 | – | – | – | – | – | 2 | 4 | – | 1 | 2 | – | 3 | – | – | – | 4 | – | 20 |
| *5* | – | *2* | – | – | – | *8* | – | *16* | – | *64* | *30* | *5* | *5* | *34* | *4* | *48* | – | *15* | *3* | *66* | *17* | 21 |
| – | – | – | – | – | – | – | – | 2 | – | 4 | – | – | – | 1 | – | 3 | – | 1 | – | 13 | – | 22 |
| 1 | – | – | – | – | – | 1 | – | 1 | – | 2 | 1 | – | – | 2 | – | 2 | – | – | 2 | 11 | 1 | 23 |
| 1 | – | – | – | – | – | – | – | 3 | – | 11 | 3 | – | – | – | – | 8 | – | 6 | – | 5 | – | 24 |
| – | – | – | – | – | – | 4 | – | 2 | – | 6 | 2 | – | – | 1 | 1 | 2 | – | 1 | 1 | 6 | 1 | 25 |
| 1 | – | 1 | – | – | – | 1 | – | – | – | 9 | 1 | 4 | 1 | 3 | – | 8 | – | – | – | 2 | 1 | 26 |
| 2 | – | – | – | – | – | – | – | 1 | – | 6 | – | – | – | 1 | – | – | – | 1 | – | – | 1 | 27 |
| – | – | – | – | – | – | – | – | 1 | – | 8 | 12 | – | – | 4 | – | – | – | 1 | – | 6 | 5 | 28 |
| – | – | – | – | – | – | – | – | 1 | – | 3 | 3 | – | – | 1 | – | 1 | – | – | – | 2 | – | 29 |
| – | – | 1 | – | – | – | – | – | 1 | – | – | 1 | – | 1 | 1 | – | 3 | – | – | – | – | 4 | 30 |
| – | – | – | – | – | – | 2 | – | – | – | 5 | 3 | – | 1 | 1 | – | 1 | – | 2 | – | – | – | 31 |
| – | – | – | – | – | – | – | – | 1 | – | 6 | 2 | 1 | 1 | 1 | – | 4 | – | – | – | 18 | 3 | 32 |
| – | – | – | – | – | – | – | – | 2 | – | 4 | 1 | – | – | 7 | 2 | 13 | – | 3 | – | – | – | 33 |
| – | – | – | – | – | – | – | – | 1 | – | – | 1 | – | 1 | 11 | 1 | 3 | – | – | – | 3 | 1 | 34 |
| *8* | – | *1* | – | – | – | *8* | – | *36* | – | *61* | *53* | *3* | *7* | *61* | *3* | *24* | – | *24* | *6* | *72* | *11* | 35 |
| – | – | – | – | – | – | – | – | 3 | – | 8 | 3 | – | – | 2 | – | – | – | 3 | – | 3 | 1 | 36 |
| – | – | – | – | – | – | – | – | – | – | 4 | 10 | 1 | 2 | – | – | – | – | – | 4 | 6 | – | 37 |
| – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | 1 | 1 | 1 | – | – | – | – | – | 38 |
| – | – | – | – | – | – | – | – | – | – | 4 | – | – | – | 2 | – | 3 | – | – | – | – | – | 39 |
| – | – | – | – | – | – | – | – | – | – | 2 | 2 | 1 | 1 | 1 | – | 1 | – | 1 | – | 15 | 1 | 40 |
| – | – | – | – | – | – | 1 | – | 1 | – | 3 | 3 | – | – | 3 | – | 1 | – | – | – | 4 | – | 41 |
| – | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | 1 | – | 3 | – | 2 | 1 | 42 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 1 | – | 1 | – | 1 | – | 2 | 1 | 43 |
| 1 | – | – | – | – | – | – | – | – | – | 3 | – | 1 | – | – | – | 4 | – | – | – | – | – | 44 |
| 2 | – | – | – | – | – | – | – | 3 | – | 3 | – | – | – | 1 | – | – | – | – | – | 1 | – | 45 |
| 1 | – | – | – | – | – | 1 | – | 6 | – | 3 | – | – | – | 1 | – | – | – | – | – | – | – | 46 |
| – | – | – | – | – | – | – | – | – | – | 2 | 5 | – | – | – | – | – | – | – | – | – | – | 47 |
| – | – | – | – | – | – | – | – | 12 | – | 1 | 1 | – | 1 | – | – | – | – | – | – | 1 | 1 | 48 |
| – | – | – | – | – | – | – | – | 1 | – | 2 | – | – | 1 | 23 | 2 | – | – | – | – | 3 | – | 49 |
| – | – | – | – | – | – | – | – | 1 | – | 1 | 2 | – | 1 | 2 | – | – | – | – | – | 4 | – | 50 |
| 1 | – | – | – | – | – | – | – | – | – | 2 | – | – | – | 2 | – | – | – | – | – | – | – | 51 |

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of the Commonwealth. Owing to the delay by physicians in returning death certificates sent them for

## CASES AND DEATHS FROM DISEASES DANGEROUS

| Line No. | CITIES AND TOWNS GROUPED IN ORDER OF POPULATION. | Population estimated as of July 1, 1918. | 19A Chicken Pox. | | 9 Diphtheria. | | 61A Cerebrospinal Meningitis. | | 19B German Measles. | | 92 Lobar Pneumonia. | | 6 Measles. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| 52 | Southbridge, | 15,255 | – | – | – | – | – | – | – | – | 1 | – | – | – |
| 53 | Weymouth, | 14,659 | – | – | 3 | – | – | – | – | – | – | – | – | – |
| 54 | Winthrop, | 14,443 | – | – | – | – | – | – | – | – | 42 | 24 | 1 | – |
| 55 | Milford, | 14,088 | – | – | – | – | – | – | – | – | 3 | 11 | – | – |
| 56 | Greenfield, | 14,028 | – | – | – | – | – | – | – | – | 1 | 3 | 4 | – |
| 57 | Wakefield, | 13,664 | – | – | 5 | – | – | 1 | – | – | 3 | 3 | – | – |
| 58 | Plymouth, | 13,430 | – | – | 1 | – | – | – | – | – | – | 8 | – | – |
| 59 | Adams, | 13,340 | – | – | – | – | – | – | – | – | 3 | – | – | – |
| 60 | Clinton, | 13,266 | – | – | – | – | – | – | – | – | 4 | 5 | 2 | – |
| 61 | Webster, | 13,242 | – | – | 2 | – | – | – | – | – | – | 4 | – | – |
| 62 | Norwood, | 12,879 | – | – | 1 | – | – | – | – | – | 3 | 3 | – | – |
| 63 | West Springfield, | 12,696 | – | – | 1 | – | – | – | – | – | 1 | – | – | – |
| 64 | Danvers, | 12,309 | – | – | 10 | – | – | – | – | – | 2 | 2 | – | – |
| 65 | Dedham, | 12,172 | – | – | 4 | – | – | – | – | – | – | 5 | – | – |
| 66 | Natick, | 11,924 | 1 | – | – | – | – | – | – | – | 8 | 1 | 1 | – |
| 67 | Saugus, | 11,625 | – | – | 3 | – | – | – | – | – | – | 4 | – | – |
| 68 | Easthampton, | 10,692 | – | – | 1 | – | – | – | – | – | – | – | 4 | – |
| 69 | Athol, | 10,582 | – | – | – | – | – | – | – | – | 1 | 1 | – | – |
| 70 | Bridgewater, | 10,468 | – | – | – | – | – | – | – | – | 5 | 11 | – | – |
| 71 | Winchester, | 10,451 | – | – | – | – | – | – | – | – | – | – | – | – |
| 72 | Braintree, | 10,162 | 1 | – | 1 | – | – | – | – | – | – | 9 | – | – |
| 73 | Palmer, | 10,019 | – | – | 3 | – | – | – | – | – | – | – | – | – |
| 74 | TOWNS, 5,000–10,000. | *346,607* | *4* | – | *16* | *2* | – | – | *1* | – | *51* | *105* | *38* | *1* |
| 75 | TOWNS, 2,500–5,000. | *182,889* | *4* | – | *14* | *1* | – | – | – | – | *22* | *39* | *5* | – |
| 76 | TOWNS UNDER 2,500. | *212,530* | – | – | *13* | – | – | – | *2* | – | *9* | *30* | *11* | – |
| 77 | STATE INFIRMARY, | – | *1* | – | – | – | – | – | – | – | – | *2* | – | – |
| 78 | CAMP DEVENS, | – | – | – | – | – | *1* | *1* | *5* | – | *1701* | *498* | *47* | *1* |

In addition to the above there occurred 21 cases of anterior poliomyelitis, 4 in Boston, 1 in Braintree,
ford, 1 in Revere, 1 in Shirley, 1 in Somerville, 1 in Whitman and 1 in Worcester, with 6 deaths, 1 in
anthrax, 1 in Chicopee, 1 in Haverhill and 1 in Winchendon, with 1 death in Springfield; 2 cases of dog
erly, 1 in Boston, 1 in Hamilton, 5 in Medfield, 2 in Melrose and 1 in Somerville, with 19 deaths, 1 in
in Haverhill, 3 in Lowell, 1 in Medfield, 1 in Milford, 1 in Newburyport, 1 in North Adams, 1 in Northamp
pellagra in Northampton, with 3 deaths, 1 in Danvers, 1 in Northampton and 1 in Worcester; 2 cases of
1 in Chesterfield and 1 in Salem, with 3 deaths, 1 in Andover, 1 in Lynn and 1 in Salem; 2 cases of septic

## TO THE PUBLIC HEALTH — Concluded.

| 38A | | 38B | | 75A | | 19C | | 7 | | 28-29 | | 30-35 | | 1 | | 38C | | 37 | | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ophthalmia Neonatorum. | | Suppurative Conjunctivitis. | | Trachoma. | | Mumps. | | Scarlet Fever. | | Tuberculosis, Pulmonary. | | Tuberculosis, Other Forms. | | Typhoid Fever. | | Gonorrhœa. | | Syphilis. | | Whooping Cough. | | |
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Line No. |
| – | – | – | – | – | – | – | – | – | – | 3 | 2 | – | – | 4 | – | – | – | – | – | – | – | 52 |
| – | – | – | – | – | – | – | – | 1 | – | 1 | – | – | – | 1 | – | – | – | – | – | – | – | 53 |
| – | – | – | – | – | – | 3 | – | – | – | – | 1 | – | – | – | – | – | – | – | – | 5 | – | 54 |
| – | – | – | – | – | – | – | – | – | – | 1 | 6 | – | – | – | – | – | – | – | – | – | – | 55 |
| – | – | – | – | – | – | 2 | – | 2 | – | 1 | – | – | – | – | – | – | – | – | – | 10 | 1 | 56 |
| – | – | – | – | – | – | – | – | – | – | 2 | 3 | – | – | 2 | – | – | – | – | – | – | – | 57 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 1 | – | – | 1 | 4 | 1 | 58 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 2 | – | – | – | – | – | – | – | 59 |
| – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | 1 | – | 2 | – | – | – | – | – | 60 |
| 2 | – | – | – | – | – | – | – | – | – | 4 | 1 | – | – | – | – | 2 | – | – | – | – | – | 61 |
| – | – | – | – | – | – | – | – | 1 | – | 2 | 1 | – | – | 2 | – | – | – | – | – | – | – | 62 |
| – | – | 1 | – | – | – | – | – | 2 | – | 1 | 1 | – | – | – | – | 1 | – | – | – | 1 | 1 | 63 |
| – | – | – | – | – | – | – | – | – | – | – | 3 | – | – | – | – | 1 | – | 12 | – | – | – | 64 |
| – | – | – | – | – | – | – | – | – | – | – | 1 | – | 1 | – | – | 1 | – | – | – | – | 1 | 65 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | 1 | – | – | – | 66 |
| – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | – | 1 | – | 67 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 1 | – | – | – | – | – | 68 |
| – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 6 | – | 3 | – | – | – | 5 | – | 69 |
| – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | 1 | – | – | – | 1 | 1 | – | – | 70 |
| 1 | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | 71 |
| – | – | – | – | – | – | 1 | – | 1 | – | – | 1 | – | – | – | – | – | – | 2 | – | 5 | 2 | 72 |
| – | – | – | – | – | – | – | – | 2 | – | – | 1 | – | – | 1 | – | – | – | – | – | – | – | 73 |
| *3* | – | *3* | – | – | – | *2* | – | *23* | – | *17* | *15* | *3* | *7* | *23* | *1* | *30* | – | *4* | *1* | *28* | *5* | 74 |
| – | – | – | – | – | – | – | – | *9* | – | *11* | *16* | *1* | *3* | *15* | *2* | *10* | – | *2* | *1* | *6* | *1* | 75 |
| *1* | – | – | – | – | – | *1* | – | *6* | – | *8* | *28* | – | *1* | *9* | *1* | *7* | – | – | *1* | *13* | *2* | 76 |
| – | – | – | – | – | – | – | – | – | – | *8* | *14* | *1* | *1* | *1* | – | *12* | – | *4* | – | – | – | 77 |
| – | – | – | – | – | – | *29* | – | *2* | – | – | – | – | – | *1* | – | – | – | – | – | – | – | 78 |

1 in Brockton, 1 in Cohasset, 1 in Fairhaven, 1 in Framingham, 1 in Halifax, 3 in Holyoke, 3 in New Bed-
Braintree, 1 in Framingham, 1 in Holyoke, 1 in Newton, 1 in Tewksbury and 1 in Worcester; 3 cases of
bite (requiring antirabic treatment), 1 in Attleboro and 1 in Lawrence; 11 cases of dysentery, 1 in Bev.
Attleboro, 1 in Bernardston, 1 in Boston, 2 in Cambridge, 1 in Chelsea, 1 in Dracut, 1 in Easthampton, 1
ton, 1 in Princeton and 1 in Salem; 9 cases of malaria, 2 in Camp Devens and 7 in Uxbridge; 1 case of
smallpox, 1 in Camp Devens and 1 in West Springfield; 4 cases of tetanus, 1 in Beverly, 1 in Cambridge
sore throat, 1 in Boston and 1 in Salem.

# MASSACHUSETTS STATE DEPARTMENT OF HEALTH.

Commissioner of Health, Eugene R. Kelley, M.D.

## Public Health Council.

Eugene R. Kelley, M.D., *Chairman.*

| | |
|---|---|
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| George C. Whipple, S.B. | Wm. J. Gallivan, M.D. |
| David L. Edsall, M.D. | John T. Wheelwright. |

| | |
|---|---|
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| Division of Food and Drugs, . . . | Director and Analyst, Hermann C. Lythgoe, S.B. |
| Division of Hygiene, . . . . | Director, Merrill E. Champion, M.D. |

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| | |
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| The Connecticut Valley District, . . | George T. O'Donnell, M.D., Springfield. |
| The Berkshire District, . . . . | Howard A. Streeter, M.D., Pittsfield. |

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[1] Leave of absence, military service.

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